State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 3999(a)-02

California Type Evaluation Program
Certificate of Approval
for Carbon Dioxide and Cryogenic Liquid Measuring Devices

For:

Precision Turbine Flowmeter
Model: SPX-CB-NL-X-X/X*
Flow Rates: See Below

* See Page 2 for specific suffix designations and descriptions

Submitted by:

Sponsler Co., Inc.
2363 Sandifier Blvd.
Westminster, SC 29693
Tel: (864) 647-2065
Fax: (864) 647-1255
Contact: Michael R. Sponsler

Standard Features and Options

Lightweight hydraulically balanced rotor
Standard end fittings
Standard pick-up coil (temperature range –430 °F to +450 °F)
Constructed of stainless steel

Flow Meter Size (in)	Liquid Range (GPM)	Liquid Range Lbs/min (CO_2)	Product
SP 5/8	2 to 16	12 to 130	Cryogenic or Carbon Dioxide Liquids
SP 3/4	2.5 to 29	16 to 250	Cryogenic or Carbon Dioxide Liquids
SP 1	4 to 75	35 to 635	Cryogenic or Carbon Dioxide Liquids
SP 1 1/4	6 to 93	50 to 788	Cryogenic or Carbon Dioxide Liquids
SP 1 1/2	8 to 150	68 to 1100	Cryogenic or Carbon Dioxide Liquids
SP 2	25 to 225	213 to 1900	Cryogenic or Carbon Dioxide Liquids

NOTE: All meters must be permanently marked to show the designated maximum and minimum discharge rates

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: January 23, 2002

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Mike Cleary, Director

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5276(a)-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Indicating Element
Digital Electronic
Model: T2000 Series
n_{max}: 10 000

Accuracy Class: III/III L

Submitted by:

Tru-Test Limited
P. O. Box 51-078
Pakuranga, Auckland
New Zealand
Tel: 011-649-978-8888
Fax: 011-649-978-8889
Contact: Lawrence Blount

Standard Features and Options

The T2000 Series consists of the GT2000 and ST2000. The ST2000 is metrologically the same as the GT2000; however, it has additional features for information management.

Semi-automatic zero setting mechanism
Automatic zero setting mechanism
Category 1 audit trail
lb/kg selectable (see Operation on Page 2)
RS232 and RS485 interface
Ticket printing
Initial zero setting mechanism (Class III only)
Multi-interval capability
Alphanumeric dot matrix display
Internal battery option
Low battery warning messages

Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: October 2, 2001

Mike Cleary, Director

Tru-Test Limited
Indicating Element
Model: T2000 Series

Application: General purpose indicating element to be interfaced with an approved and compatible weighing element.

Identification: All required information is located on the face of the indicator except for the serial number which is located on the rear of the indicator.

Sealing: The indicator uses a Category 1 audit trail with two event counters (calibration and configuration). To access the event counters press the "SETUP" key, then press the soft key with the arrow pointing to the right, and then press the "ABOUT" soft key. This displays the System Information screen which contains the calibration and configuration counter information on the lower right. To exit this screen press the "ESCAPE" key, which returns to the weighing screen.

Operation: Units are selected during setup. The units can be set to "kg only", "lb only", or "kg or lb". If the "kg or lb" option is selected, the user can change the units by placing the cursor over the unit symbol on the live weighing screen and pressing "ENTER".

Test Conditions: This certificate supersedes Certificate of Approval Number 5276-01 and is issued to correct the "Initial zero setting mechanism" in the Standard Features and Options box. The original test conditions are listed before for reference.

Certificate of Approval Number 5276-01: A Tru-Test Model ST2000 indicator was submitted for testing. The emphasis of this evaluation was on device design, operation, printing functions, and compliance with influence factor requirements. The indicator was interfaced with a load cell simulator and tested for accuracy over a temperature range of -10 °C to 40 °C (14 °F to 104 °F). The device was tested over a voltage range of 10.7 VDC to 16.5 VDC. Additionally, the indicator was connected to a load cell and printer to verify compliance with zero, zone of uncertainty, motion detection requirements, and printing format.

Results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: K. Jones (CA)

TA Number: 181

Control Number: 3542

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5286-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Recycling System Controller
Recycling Material Redemption Center
Model: Palm Buyer Application, Version 1.17

Submitted by:

Tomra Pacific, Inc.
150 Klug Circle
Corona, CA 92880
Tel: (909) 520-1700, ext. 215
Fax: (909) 520-1701
Contact: Wendy West

Standard Features and Options

Weight redemption ticket printing
Push-button tare capability
Motion detection provided by the certified primary indicating element
Touch screen display
Gross, tare, and net weight display
Bi-directional RS232 Serial port

Operating system: Palm OS
Program language: Satellite Forms

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: October 22, 2001

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Mike Cleary, Director

Tomra Pacific, Inc.
Recycling System Controller
Model: Palm Buyer Application, Version 1.17

Application: This system controller issues weight redemption tickets when interfaced with a certified and compatible indicator and weighing element.

Identification: The identification is labeled on the front of the palm device. The software version is printed on the redemption ticket.

Sealing: The software requires no sealing as it controls no metrological functions. Provision for sealing metrological functions are provided by the certified indicator.

Test Conditions: A field evaluation was conducted with the Palm Buyer Application, Version 1.17 interfaced with a Model EF-218 Cardinal floor scale (Certificate of Approval Number 3313-90) and a Model 758 Cardinal indicator (Certificate of Approval Number 4646-97). The emphasis of the evaluation was on performance, interaction with the indicator, and printed ticket format.

The results of the evaluation indicate the device complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Ken Jones (CA)

TA Number: 187

Control Number: 3550

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5257-01

California Type Evaluation Program
Certificate of Approval
for Vapor Meters

For:

Invensys Energy Metering
Hydrocarbon Gas Vapor Meter
Model: Equimeter Approvals (See Table Below)

Submitted by:

Invensys Energy Metering
805 Liberty Blvd.
P.O. Box 528
DuBois, PA 15801
Tel: (814) 375-8368
Fax: (814) 375-8395
Contact: Paul Honchar

Standard Features and Options

Invensys Energy Metering has purchased Equimeter Incorporated

The name Equimeter has been changed to Invensys

The models of Invensys hydrocarbon gas vapor meters listed below, previously approved under the name of Equimeter, are approved for sale and use in the State of California.

Model	Previous Certificate Number	Model	Previous Certificate Number
R-275	1683-78	3000	576-621
R-275TC	1740-79	3000TC	1164-71
S-275	2643-85	5000	3781-92
S-275TC	2643-85	5000TC	634-63
R-315	1741-79	10 000	576-62
R-315TC	3781-92	10 000TC	3781-92
415	570-62	T-18 Mark II Turbo Meter	1288-73
415TC	655-64	T-30 Series "G" Turbo Meter	1165(a)-71
750	586-62		
750TC	1150-71		

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: March 2, 2001

_____
Mike Cleary, Director

Invensys Energy Metering
Hydrocarbon Gas Vapor Meter
Model: Equimeter Approvals

Application: For use in the measurement of hydrocarbon gases.

Identification: Attached to the front of the meter is a plate showing the manufacturer's name, meter model number, serial number, and capacity rate for the particular products to be metered.

Sealing: Located on top of the meter is a cover that allows access to internal calibration. A wire security seal may be threaded through a drilled head screw attaching the cover to the meter and another drilled head screw attaching the index cover to the meter case.

Models T-18 and T-30 Turbo Meters: Located on top of the index register is a cover that allows access to internal components. A wire security seal may be threaded through a drilled head screw attaching the cover to the index register and a drilled head bolt attaching the index register adapter to the top plate assembly. Additionally, a wire security seal may be threaded through a drilled head bolt attaching the register index adapter to the top plate assembly and a drilled head bolt attaching the top plate assembly to the meter body assembly.

Test Conditions: This Certificate is issued to change the manufacturer's name from Equimeter to Invensys Energy Metering. No additional testing was necessary based upon the referenced Certificates of Approval and information provided by the manufacturer.

The results of the evaluations and information provided by the manufacturer indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Reviewed By: Norman Ingram (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5265-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Automatic Bulk Weighing System
Digital Electronic
Models: 778CBW and 778SCBW
n_{max}: 10 000

Accuracy Class: III/III L

Submitted by:

Cardinal Scale Mfg. Co.
203 East Daugherty St.
Webb City, MO 64870
Tel: (417) 673-4631
Fax: (417) 673-5001
Contact: Stephen Langford

Standard Features and Options

Alphanumeric dot matrix display
Programmed commodity names
Time and date
Optional NEMA 4X enclosure (denoted by an "S" in the model number)

When used as part of a bulk weighing system for grain it must meet Class III tolerances
When used as part of a bulk weighing system for commodities other than grain it must meet the appropriate Class III or Class III L tolerances

System Components:

Cardinal Model 778 or 778S weight indicating instrument (Certificate of Approval Number 4585(a)-99) with bulk weighing software
Cardinal Model P500 tape printer

Temperature Range: -10 °C to +40 °C (14 °F to 104 °F)

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: April 27, 2001

Mike Cleary, Director

Cardinal Scale Mfg. Co.
Automatic Bulk Weighing System
Models: 778CBW and 778SCBW

Application: The system may be used in any bulk weighing scale system. When used as part of a system to weigh grain it must be marked as a Class III device. When used in a bulk weighing system for any commodity other than grain it must be marked as Class III or Class III L, whichever is appropriate.

Identification: The Identification badge is located on the rear of the 778CBW enclosure and may be viewed by tilting the indicator forward. The identification badge is located on the side of the 778SCBW enclosure.

Sealing: The weight indicating element is sealed using a lead and wire security seal located on the scale input card of the back of the instrument. The wire security seal is threaded through a drilled screw head and an adjacent fixed hole. On the NEMA 4X enclosure, a wire security seal can be threaded through the clamping screw and a hole on the front cover lip.

Test Conditions: The emphasis of the evaluation was on device design, operation, display, and interaction with the scale. Environmental testing was not performed since the Cardinal Model 778 indicating element had previously been evaluated (Certificate of Approval Number 4585(a)-99). The Model 778CBW was evaluated in a laboratory while interfaced with a scale simulator. The device was then tested in the field under actual operating conditions.

Results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001Edition

Tested By: K. Jones (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5266-01

California Type Evaluation Program
Certificate of Approval for Weighing Devices

For:

Scale System Controller
Cotton Weighing Application
Digital Electronic
Model: DTN Cotton Network

Submitted by:

*e*Cotton, Inc.
2516 Mt. Moriah, Suite 720
Memphis, TN 38115
Tel: (901) 547-9798
Fax: (901) 547-1443
Contact: Wil Lindahl

Standard Features and Options

Primary weight indications and motion detection provided by an approved and compatible indicator
Weighmaster ticket printing
Vehicle, customer and product identification
Weigh-in/weigh-out capability
Net weight calculations

Operating system: Windows
Program language: Visual DataFlex 2000

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable technical requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: May 21, 2001

_____
Mike Cleary, Director

_e_Cotton, Inc.
Scale System Controller
Model: DTN Cotton Network

Application: Scale system controller is interfaced with a vehicle scale and platform scale to perform weigh-in and weigh-out operations and to weigh bales of cotton.

Identification: The identification information is continuously displayed on the main menu screen.

Sealing: The controller requires no provision for sealing and is protected by a password that is retained by the manufacturer. Provisions for sealing metrological parameters are provided by the weighing and indicating elements and are performed as outlined in their respective Certificates of Conformance.

Operation: The scale controller is used in conjunction with an approved and certified digital weight indicator with a print function. The cotton product is weighed on the scale. The "PRINT" button is manually activated on the indicator. The information that is actively displayed is transferred through the serial RS-232 printer port to the scale controller. If the connection between the indicator and the scale controller is interrupted or severed, manual weights can be entered into the scale controller.

Test Conditions: The scale controller was interfaced with a Flex-Weigh (Model DWM IV) digital indicator and connected to an approved vehicle scale. The scale controller was also evaluated interfaced to a Flex-Weigh (Model DWM IV) digital indicator and connected to a Flex-Weigh (Model LPF4848-5K) platform scale. Several weighmaster tickets were printed to insure compliance. The emphasis of the evaluation was on performance of the controller, interaction with the indicating element, and information on the printed ticket.

The results of the evaluation indicate the system complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: D. Parks (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5267-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Batch Controller
Asphalt Hopper Scale
Load-out Controller
Model: LC-1000

Submitted by:

SYSTEMS Equipment Corporation
903 3rd Avenue SW
Waukon, IA 52172
Tele: (319) 568-6387
Fax: (319) 568-6224
Contact: Orrin Grangaard

Standard Features and Options

Primary weight indications and motion detection are provided by the compatible and certified indicating element

Ticket print capability
Vehicle customer and product identification
Stored tare capability (identified on the weight ticket)
Pound, ton, and metric ton conversions

Minimum System Requirements:

CRT display (monitor)
Alphanumeric keyboard
Hardware: 386 processor or greater, 4 MB RAM, 10 MB HD
Program Language: Foxpro 2.6

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable technical requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: May 3, 2001

_____
Mike Cleary, Director

SYSTEMS Equipment Corporation
Batch Controller, Asphalt Hopper Scale
Model: LC-1000

Application: General purpose scale controller for batching asphalt and construction materials. The system is designed for use with a hopper or vehicle scale.

Identification: The identification information is continuously displayed on the upper portion of the operator's display.

Sealing: The system controller requires no provisions for sealing and is protected by a password retained by the manufacturer. Provisions for sealing metrological parameters are provided by the weighing and indicating elements.

Operation: The weighing sequence is initiated by the batch controller operator and loading of the vehicle proceeds automatically until the system reaches a preset weight. The weight, silo, and condition of the scale are continuously monitored and displayed on the operator's CRT (monitor). When the predetermined weight has been attained and stabilized the controller will print a weight ticket.

Test Conditions: The Model LC-1000 (version 2000-F16) was submitted for this evaluation. The system was interfaced to an A&D Engineering, Model AD-4323, digital weight indicator (Certificate of Approval Number 2987-88). The emphasis of the evaluation was on device design, operation, print format, and interaction with the digital weight indicator. Additionally, the system was tested for compatibility with error conditions such as over-capacity and motion detection.

The results of the evaluation indicate the device complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: G. Castro (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5269-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Vehicle Scale Operating System
Scale Management System Implementing Timber Tare
Model: 73

Submitted by:

Roseburg Forest Products
P.O. Box 1088
Roseburg, OR 97470
Tel: (541) 679-3311
Fax: (541) 679-2798
Contact: Dwayne Gear

Standard Features and Options

- Primary gross weight indication, zero, and motion detection are provided by a certified and compatible indicating element
- Scale ticket printing for certified weight tickets

Minimum System Requirements

Computer video display
Alphanumeric keyboard
Operating system: Windows
Program language: Delphi
Hardware: 100 MHZ Pentium Processor with 128MB RAM

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: June 14, 2001

Mike Cleary, Director

Roseburg Forest Products
Vehicle Scale Operating System
Implementing Timber Tare
Model: 73

Application: The Model 73 is a computer based system used to record scale weights, collect data for printing weight certificates, bill customers, and generate summary reports. The system must be interfaced to a certified and compatible vehicle scale and indicating element.

Identification: System identification appears on the bottom left corner of the video monitor when the weight capture screen is displayed.

Sealing: The system requires no provision for sealing and is password protected. The manufacturer retains program source code. Provisions for sealing metrological parameters are provided by the certified vehicle scale and weight-indicating element.

Operation: The system operator initiates all weighing transactions. The operator must enter the required information such as customer's name, type of commodity, and vehicle identification. The system will accept stable weights only from the weight indicator when the operator clicks on the weight icon. The tare weight of the vehicle is stored in memory and may be reused until the system program demands a new tare weight in accordance with "timber tare" requirements.

Test Conditions: A field evaluation was conducted with the system interfaced to a Mettler-Toledo, Inc., Model Jaguar, digital weight indicating element (Certificate of Approval Number 4336(b)-99). The emphasis of the evaluation was on design, operation, interaction with the weight-indicating element, and printed information format. Additionally, the system was evaluated for compliance with other requirements such as over capacity, motion detection, and negative weight values.

Results of the evaluation indicate the device complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Norman Ingram

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 4766(b)-01

California Type Evaluation Program
Certificate of Approval
For LPG and Vehicle Tank Meters

For:

LPG and VTM Electronic Measuring System

Model: EMH500X Register

Capacity: Maximum Total Volume: 9 999 999
Maximum Totalizer Volume: 99 999 999

Submitted by:

Liquip Sales PTY Ltd.
13 Hume Road
Smithfield, Sydney NSW 2164
Australia
Tel: 61 2-9725-1055
Fax: 61 2-9725-1252
Contact: David Gregory

Standard Features and Options

Register with two liquid crystal displays:

Top display is for indicated volume delivery (gallons or liters)
Bottom display is for preset deliveries (refined petroleum products only)

Integral pulse transmitter comprised of a 25 slot disk with three opto-coupled sensors (150 pulses per revolution, 1000 RPM maximum shaft speed)
Electronic temperature compensation for LPG and refined petroleum products
Model EJB101 power box: 10 to 30 volt DC power supply with intrinsically safe barrier and switches for presets
Battery back-up
Liquip blaster ticket printer or compatible equivalent

Options: Model ERP100 remote pulser
Touch PC accounting system
Heater

Model Description:

EMH500	Blank – No optional heater
EMH500H	Heater option added

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable technical requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: March 13, 2001

Mike Cleary, Director

Liquip Sales PTY Ltd.
LPG and VTM Electronic Measuring System
Model: EMH500X Register

Application: The Liquip Model EMH500X measuring system is used to measure refined petroleum products and liquefied petroleum gas when used with approved, compatible vehicle mounted positive displacement meters, and other compatible vehicle mounted equipment. The two stage preset functions are for refined petroleum products only.

Identification: The identification information for the register is located on the front of the register base assembly. The software version 01.01.09 is displayed on power up. Only the first two digits on the left are metrologically significant. The power box, Model EJB101, identification is on top of the housing. The optional Touch PC computer identification information is located on the back of the hand-held device.

Sealing: The Model EMH500X register has provisions for sealing bolts, which connect the register to the temperature compensator or meter base assembly. A wire security seal can be inserted through two taper threaded plugs on the face of the register to prevent undetected calibration and configuration access. The power box and temperature probe have provisions for sealing. The blanking tag on the communication's cable from the register to power box is also sealable. The Touch PC does not require sealing.

A single K-factor or multipoint curve calibration K-factors can be used in this system. Press the register **total** button then press the register **reset** button to print this information.

The meter and product temperature can be viewed by pressing the register **total** button five times.

To print the software setting, press the register **batch** button while the temperature is displayed. The display will display **report no**. Press the register **total** button to change to **report yes**, then press the register **stop/start** button to print the settings.

Operation: The Model EMH500X system pulser sends pulses to the processor board. After the pulses are processed, the information is sent to the display and the optional Touch PC. A ticket can be printed on demand or automatically as per system set-up. Multiple tickets may be printed, but only after the first print. All duplicate tickets will state Aduplicate docket not original.@ To print a ticket from the register indication, press the **reset** button on the register. If the Touch PC is used, press the **print** button on the screen display menu. The Touch PC receipt/invoice format includes (but not limited to):

price per unit	time/date	corrected volume	plant description
total price	delivery number	uncorrected volume	product
total volume	meter number	specific gravity	temperature corrected to 60 EF

Test Conditions: This certificate supersedes Certificate of Approval Number 4766(a)-99 and is issued to include an additional suffix to the existing model number. This added suffix represents a heater option feature. No test was conducted since the heater option is non-metrological. The previous test conditions are listed below for reference.

Certificate of Approval Number 4766(a)-99: This certificate superseded Certificate of Approval Number 4766-98 and was issued to verify the TouchStar Technologies thermal printer cannot change any metrological parameters on the EMH500 register. The Model EMH500 and the TouchStar Technologies thermal printer were submitted for evaluation. A lab evaluation was performed to check compatibility, receipt format, and to verify the printer cannot change any metrological parameters in the EMH500 register.

Liquip Sales PTY Ltd.
LPG and VTM Electronic Measuring System
Model: EMH500X Register

Test Conditions: (Continued)

Certificate of Approval Number 4766-98: The Model EMH500 was submitted for evaluation. The emphasis of the evaluation was on design, performance, ticket format, and interaction with measuring systems. A lab evaluation was performed to check temperature compensation, receipt format, and review menu features for sealing requirements. The Model EMH500 measuring system was then installed on a propane delivery truck and multiple tests were performed at various full, mid-range, and slow flow rates. The same tests were performed after 30 days of use and a throughput of 31 000 gallons of LPG. Similar tests were performed on a vehicle mounted diesel application and with solvent on a test bench.

The results of the evaluations indicate the system complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition.

Tested By: Dan Reiswig (CA) 4766-98, 4766(a)-99

Reviewed By: Charles Nelson (CA) 4766(b)-01

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 4987(a)-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Price Computing and Bench Scale
Digital Electronic
Models: FX 220 and FX 210
n_{max}: 6000
e_{min}: 0.002 lb (0.001 kg)
Capacity: See Table Below
Platform: 11.75" x 8.5"
Accuracy Class: III

Submitted by:

Avery Berkel
One Berkel Drive
La Porte, IN 46350
Tel: (219) 326-7000
Fax: (219) 324-4311
Contact: Mel Maxson
Email: USGeneral@AveryBerkel.com

Standard Features and Options

Capacities*	
6 lb x 0.002 lb	3 kg x 0.001 kg
12 lb x 0.002 lb	6 kg x 0.001 kg
15 lb x 0.005 lb	6 kg x 0.002 kg
30 lb x 0.005 lb	12 kg x 0.002 kg
30 lb x 0.01 lb	15 kg x 0.005 kg
60 lb x 0.01 lb	30 kg x 0.005 kg
* Capacities are set-up at the factory	

FX 210 and FX 220
Initial zero setting mechanism (IZSM)
Automatic zero setting mechanism (AZSM)
Semi-automatic zero (push-button)
Semi-automatic tare (push-button)
Center of zero annunciator
Liquid crystal display (LCD)
Sleep timer with variable time settings
Gross/net weight display
120 VAC power adapter

FX 220 only
Stored tare
Proportional tare (Canada only)
Multiplier keys (x2 and x4 or price per 100 g)
Accumulation of total price
Price look up (PLU)
Keyboard tare

Options: Tower weight display Internal 9 VDC battery operation Re-chargeable battery pack

Load cell: Avery Berkel T701 (Certificate of Conformance Number 98-199)

Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: March 12, 2001

Mike Cleary, Director

Avery Berkel
Price Computing and Bench Scale
Models: FX 220 and FX 210

Application: The FX 220 is for use in direct sales, price computing, or general purpose weighing. The FX 210 is for general purpose weighing.

Identification: The self-destructive pressure-sensitive seal is on the right side of the scale.

Sealing: The scale may be sealed using two pressure-sensitive security seals. A self-destructive adhesive security seal may be placed over the programming access cover, which is located inside the battery compartment on the right-hand side of the scale. This prevents access to the main printed circuit (PC) board connector. The scale calibration mode is accessible when a connector, with a jumper pin installed, is connected to the PC board. A second adhesive seal may be placed on the underside of the scale over the base cover release clip.

Test Conditions: This certificate supersedes Certificate of Approval Number 4987-99 and is issued to include the Model FX 210 and to increase the capacity of both models (60 lb x 0.01 lb, 30 kg x 0.005 kg). The Model FX 210 is identical in construction to the Model FX 220 with the exception of price computing features. A Model FX 210 with a capacity of 30 kg x 0.005 kg was submitted for evaluation. Several increasing/ decreasing load and shift tests were conducted. The scale was tested for width of zero, center of zero, discrimination, and zone of uncertainty requirements. The scale was tested over a voltage range of 5.4 VDC to 13.2 VDC. Influence factor tests were conducted over a temperature range of -10 °C to 40 °C (14 °F to 104 °F). Additionally, a load of one-half capacity was placed on the scales over 100 000 times. The original test conditions are listed below for reference.

Certificate of Approval Number 4987-99: Three models were submitted for evaluation: A 6 kg x 0.001 kg capacity scale with a tower display and battery power supply, a 15 kg x 0.005 kg capacity scale, and a 30 lb x 0.005 lb capacity scale. The emphasis of the evaluation was on device design, operation, performance, and marking requirements. Each device was tested for width of zero, center of zero, discrimination, and zone of uncertainty requirements. Several increasing/decreasing load and shift tests were conducted. Additionally, the devices were tested over a voltage range of 100 VAC to 130 VAC and 4.5 VDC to 8 VDC. Influence factor tests were conducted on each scale over a temperature range of -10 °C to 40 °C (14 °F to 104 °F). A load of one-half capacity was applied to the scales over 100 000 times. The scales were tested periodically during this time.

Results of the evaluations indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Sam Chan (CA)

Update Reviewed By: Dan Parks (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5259-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Hopper Scale Retro-Fit Kit and Hopper Scale
Load Cell Electronic
Model: SG Series (See Table Below)
n_{max}: 1000
Capacity: See Table Below

Accuracy Class: III L

Submitted by:

Allpro Scale Corp.
935 Dover Dr.
San Bernardino, CA 92407
Tel: (909) 381-0079
Fax: (909) 383-3179
Contact: Sam Guillen

Standard Features and Options

Retro-Fit Kit Series

Model Number	Capacity (lb)	Load Cell Capacity (lb)	Number of Cells
SG33K	3000	2000	3
SG35K	5000	2500	3
SG310K	10 000	5000	3
SG45K	5000	2500	4
SG410K	10 000	5000	4
SG420K	20 000	10 000	4
SG440K	40 000	20 000	4
Hopper Scale			
SG340K	40 000	20 000	3

The gross capacity of the scale cannot exceed the summed capacity of the load cells minus the weight of the hopper or the capacity of the original scale, whichever is less.

Load Cell Type: Artech, Model 20210 Series (Certificate of Approval Number 3198(b)-90) or certified equivalent.

Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: April 24, 2001

Mike Cleary, Director

Allpro Scale Corp.
Hopper Scale Retro-Fit Kit and Hopper Scale
Model: SG Series

Application: Construction material hopper scale for use with compatible and certified indicating elements. The retro-fit kit is designed to replace mechanical hopper scale levers. The capacity of the retro-fit scale cannot be greater than the original scale.

Identification: An identification plate is permanently mounted on the side of each hopper.

Sealing: The load cell junction box may be sealed with a wire security seal. Additionally, the overall calibration can be sealed at the indicating element.

Operation: The retro-fit kit consists of mounting hardware and digital electronic load cells that replace mechanical levers on a hopper scale. The mounting hardware (steelyard rods) suspends the scale with three or four (depending on the model) digital electronic load cells in a level position. The Model SG340K is not a retro-fit kit and the hopper is suspended by three load cells. The weighing element is then interfaced to a compatible digital weight indicator.

Test Conditions: This Certificate is issued to private label Allpro Scale Corp. Model SG Series. The Allpro Scale Corp. Model SG Series is identical to the Allstar Scale Service Corporation Model AS Series (Certificate of Approval Number 4776(a)-00) except for the name under which it is marketed. The test conditions for Allstar Scale Service Corporation Model AS Series are repeated below for reference.

Certificate of Approval Number 4776(a)-00: This certificate superseded Certificate of Approval Number 4776-98 and was issued to include the Model AS340K hopper scale and to include the test conditions for the Model AS33K retro-fit kit. These were inadvertently omitted on the original certificate. The Model AS340K (40 000 lb capacity) hopper scale was submitted for evaluation. The emphasis of the evaluation was on the performance of the hopper scale including motion detection. The hopper scale was tested to 33 000 lb with 13 000 lb of known test weights and 20 000 lb of material. The scale was used for approximately 40 days and retested.

Certificate of Approval Number 4776-98: The emphasis of the evaluation was on the hopper scale retro-fit kit performance including motion detection. A 20 000 lb capacity scale was tested to capacity with 10 000 lb of known test weights and 10 000 lb of material. A 3000 lb capacity scale was also tested using 3000 lb of known test weights. The scales were in use for approximately 45 days and retested.

The results of the evaluations indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: G. Castro (CA), J. Delperdang (CA) (4776-98); G. Castro and D. Parks (CA) (4776(a)-00)

Update Reviewed By: Dan Parks (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5260-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Computing Scale
Digital Electronic
Model: PC-100
n_{max} : 4500
Capacity: 60 lb (0-30 lb x 0.01 lb/30-60 lb x 0.02 lb)
Platform: 13.8" x 10.6"
Accuracy Class: III

Submitted by:

ACOM, Inc.
Thonghoon Bldg, #479, Uijongbu 2-Dong
Uijongbu-SI
Kyungki-Do, Korea 480-012
Tel: 82-351-871-0193
Fax: 82-351-871-0194
Contact: Sam H. Baek

Standard Features and Options

Semi-automatic zero (push-button)
Automatic zero setting mechanism (AZSM)
Semi-automatic (push-button) tare
Proportional tare (%)
Customer display
AC power supply
Numeric keypad
Physical seal
Percent tare annunciator
Initial zero setting mechanism (IZSM)
Programmable (PLU) tare
Gross/net display
Unidirectional RS-232 communication port
Liquid crystal display
Memory recall

Options: Tower display
PLU keyboard only with tower display
LED display

Load cell: Acom, Inc. Model CBS-30

Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: March 14, 2001

Mike Cleary, Director

ACOM, Inc.
Computing Scale
Model: PC-100

Application: General purpose computing scale for direct sale.

Identification: The identification plate is riveted to the side of the scale.

Sealing: The calibration switch is located under a metal plate, beneath the scale platter. Access to the switch can be sealed by threading a wire security seal through a drilled head screw and a metal tab.

Operation: The RS-232 communications port can be connected to a computer serial port. The computer cannot be used as a primary display or as a printing device. It will only be used as a storage database.

Test Conditions: The emphasis of the examination was on the device design and operation. The Model PC-100 was tested over a temperature range of -10 °C to 40 °C (14 °F to 104 °F). A load of approximately one-half scale capacity was placed on the scale 100 000 times. Increasing/decreasing load and shift tests were conducted periodically during this time. Additionally, the scale was tested over a voltage range of 100 VAC to 130 VAC.

The results of the evaluation indicate the device complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: D. Parks (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5263-01

California Type Evaluation Program
Certificate of Approval for Measuring Devices

For:

Water Dispenser
Coin-Operated
Generic Names: H_2O To Go or Pure Fill

Models: PFWV, PFVM1 and PFVM2

Submitted by:

Pure Fill Corporation
1536 Princeton Avenue
Modesto, CA 95350-5728
Tel: (209) 491-7888
Fax: (209) 549-1381
Contact: Joseph DiSanto

Standard Features and Options

Models PFVM1 and PFVM2: Free standing, single or dual vend windows
Model PFWV: Exterior wall mounted, single window

Gallon delivery per vend: 1, 2, 3, and 5 gallons
Customer LED indicator accumulates value of coin drops
Lighted indicator when "correct change" is required
Lighted indicator when "sold-out" condition exists

NOTE: Money-operated type devices shall clearly and conspicuously display adequate information detailing the method for the return of monies paid when the product or services cannot be obtained. This information shall include the name, address, and telephone number of the local servicing agency for the device.

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: April 4, 2001

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Mike Cleary, Director

Pure Fill Corporation
Water Dispenser, Coin-Operated
Models: PFWV, PFVM1 and PFVM2

Application: For use as a retail water vending dispenser to dispense water for domestic purposes, customarily at public locations.

Identification: The identification badge is located on the lower left side of the dispenser cabinet on the Models PFVM1 and PFVM2. The Model PFWV is mounted through an exterior wall and is labeled on the rear side which is accessible to the public during the hours the business is open.

Sealing: The water meter, located in the dispenser cabinet, can be sealed with a wire security seal threaded through a hole on the register locking ring to a hole on the measuring chamber.

Operation: This device is a money value vending dispenser designed to deliver water in single, uninterrupted quantities of one, two, three, and five gallons. Delivered volume is regulated by a non-adjustable ABB (formerly Kent) water meter, Model C-700 (Certificate of Approval Number 5100-00). The meter, Type B, is equipped with a self-powered generator which produces pulses for remote systems. All units have timing devices which act to cycle the metering sequence. The Model PFWV delivers water already processed by the business where installed. The Models PFVM1 and PFVM2 are self-contained.

A display indicates the money value required to activate a product-select button and start delivery. An indicator displays the cumulative amount of money value deposited. When change cannot be made for over-deposits, a lighted indicator reflects "correct change" must be used. When product is not available, a lighted indicator reflects the "sold-out" condition for which dispensing is not allowed.

Test Conditions: A PFVM1 water vending dispenser was submitted for evaluation. The PFVM1 dispenser was installed outside of an establishment. Three tests each at one, two, three, and five gallon deliveries were performed. The dispenser was also tested with various coin denominations and identification requirements were reviewed. The meter was sealed and the dispenser was placed into service for approximately 60 days and over 2000 gallons of throughput. The same accuracy tests were repeated and the deliveries were found to be in tolerance.

Results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition.

Tested By: Dan Reiswig (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5264-01

California Type Evaluation Program
Certificate of Approval
for Measuring Devices

For:

Electronic Watt-Hour Metering System
Generic Name: Resi-MON
Meter Models:
3208100W (kh=1.953 watt-hour per blink) with
546-100-19-L72 (100 amp) 100: 2.0 VAC Sensor

3208200W (kh=3.9063 watt-hour per blink) with
546-200-19-L72 (200 amp) 200: 2.0 VAC Sensor

Submitted by:

E-MON Corporation
One Oxford Valley, Suite 418
Langhorne, PA 19047
Tel: (215) 752-0601
Fax: (215) 752-3094
Contact: Dave Bovankovich

Standard Features and Options

Meter input voltage ratings are: 120V, 208V and 240V
Sensor coil 0.3 accuracy class
Six digit LCD kilowatt-hour totalizer display
LCD back-up by non-volatile memory in case of power failure

Options: Meter is provided with a modular connector for pulse output
This feature is denoted by the suffix "P" in the model number (not tested)

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: April 17, 2001

Mike Cleary, Director

E-MON Corporation
Electronic Watt-Hour Metering System
Generic Name: Resi-MON
Meter Models: 3208100W and 3208200W

Application: The electronic watt-hour metering system is approved for use in legally submetered electrical service systems.

Identification: A tamper evident adhesive identification label is attached to each portion of the two piece meter enclosure.

Sealing: The main circuit board, located inside the meter enclosure, has a sealable cover and provisions for a wire security seal which protects the calibration and configuration adjustment mechanisms. The meter enclosure is supplied with four screws of which two are drilled for a wire security seal to be affixed diagonally across the face of the meter enclosure after installation. This prevents access to the connection terminals for line voltage and for the current sensors.

Operation: The current sensor output is proportional to the tenant's current load and is connected to the central processing unit (CPU) within the meter. The CPU processes the information and a front panel display indicates accumulated kilowatt-hour values with liquid crystal numerals.

Test Conditions: The Resi-MON system was submitted for evaluation. Three meters were tested at the Division of Measurement Standards (DMS) with loads varying from 6 amps to 100 amps and at 1.0 and 0.5 power factor. The meters were sealed and installed at a location for approximately 30 days. The tests were repeated at DMS. The system was also reviewed for sealing and marking requirements.

The results of the evaluation and information provided by the manufacturer indicate the system complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Dan Reiswig (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 4490(b)-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Computing Scale
Digital Electronic
Models: SL-9000-30X, SL-9000-30X-N Series
OP-9000-R, OP-9000-30X-N, & H-9000N
n_{max}: 3000
Capacity: 30 lb x 0.01 lb (Single Interval) or 0 to 15 x 0.005 lb/15 to 30 lb x 0.01 lb (Multi-interval)
Platform: 9.5" x 13.75"

Submitted by:

TEC America Inc.
4401-A Bankers Circle
Atlanta, GA 30360
Tel: (770) 449-3040
Fax: (770) 453-0866
Contact: Thomas L. Morrow

Standard Features and Options

SL-9000-XX	**X**	**-XX**	**X**	**-XX**	**-X**
Capacity	Range	Display Type	Keyboard	Country	Blank: Computing scale R: Remote indicating element for the OP-9000-R remote weighing element
30: 30 lb	L: Single range M: Multi-interval	FF: Full dot matrix LS: 7-segment liquid crystal ES: *	B: Built-in R: Remote	US	
* The ES is the same as LS except for limited memory and no scale-to-scale communications.					
"N" in Models SL-9000-30X-N and H-9000N indicate that the Ethernet communications option is installed.					

Single weighing range or automatic multi-interval
Semi-automatic and keyboard tare
Semi-automatic (push-button) zero
1/4 lb and 1/2 lb multiplier keys (may be disabled)
Ethernet communications option
Scrolling customer message
Automatic zero setting mechanism (AZSM)
Unit price and tare save keys
Remote weighing element Models OP-9000-R and OP-9000-30X-N
Integral label printer with bar code (UPC) and nutrition information print capability
Product code look-up (PLU) with tare and programmable commodity speed keys (70 x 2)

Load cell type: TEC LC E28-15SA (used in standard and remote weighing elements)

Temperature Range: 0 °C to 40 °C (32 °F to 104 °F)

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable technical requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: January 26, 2001

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Mike Cleary, Director

TEC America Inc.
Computing Scale
Models: SL-9000-30X, SL-9000-30X-N Series, OP-9000-R, OP-9000-30X-N and H-9000N

Application: For direct sale and prepack application in delicatessens and supermarkets. Labels on prepackaged items must conform to requirements adopted under the Fair Packaging and Labeling Act. Models with remote weighing elements have the suffix "R" and must be marked "For Prepackaging Use Only" or a similar statement.

Identification: The identification plate is riveted to the base on the operator's side of the scale. The remote weighing element has an identification plate on the left side of the base.

Sealing: The complete scale requires two wire security seals. One seal can be threaded through two sealing tabs under the platter to prevent undetected access. A second seal can be threaded through two sealing screws on the left side of the base to prevent undetected access to the calibration mode switch.

Units with remote weighing elements require one wire security seal at the center rear of the OP-9000-R base to prevent undetected access to the load cell.

Operation: The FF version scales can be programmed to display scrolling messages when the scale is not in use. The weight display is not visible when the scrolling message is on. To define the zero indication, the statement "Scrolling message indicates scale at zero" is marked on upper right of the display.

The scale may be set-up with a single weight range (30 lb x 0.01 lb) or with automatic multi-interval ranges (0-15 lb x 0.005 lb and 15-30 lb x 0.01 lb). Tares are taken to the internal resolution of the scale. The scale rounds the net weight to the appropriate displayed division that meets the requirements that gross – tare = net.

To change a scale from multi-interval (standard version) to a single weight range version, the security seal must be broken and the scale's programming changed. When this is done, the model number and capacity by division size markings must be changed on the ID plate and on (next to) the weight display. This is done by affixing a permanent decal over the existing markings.

Test Conditions: This certificate supersedes Certificate of Approval Number 4490(a)-97 and is issued to add the Model H-9000N and an Ethernet communications board option. In addition, it is issued to change the model number for the remote weighing element and to correct errors in the Sealing and Operation sections.

The Model H-9000N is the printer and indictor assembly of the SL-9000-30X without a weighing element, designed for bakery use. It was tested for printing functions and label information. It is compatible for use with the OP-9000-R and the new OP-9000-30X-N weighing elements.

Ethernet communication is used by computers with most point-of-sale systems for price and PLU file maintenance. The addition of the Ethernet communications board has no affect on any metrological features. All devices manufactured with the Ethernet communications board will have the letter "N" added to the model number as shown under Standard Features and Options.

The model number of the remote weighing element will change from OP-9000-R to OP-9000-30X-N. They are identical and interchangeable.

Two errors have been corrected. In the Sealing section, the end of the last sentence has been changed from "calibration mode switch" to "load cell". In the Operation section, the beginning of the first sentence has been changed from "The LS and ES version" to "The FF version".

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TEC America Inc.
Computing Scale
Models: SL-9000-30X, SL-9000-30X-N Series, OP-9000-R, OP-9000-30X-N and H-9000N

Test Conditions: (Continued)

Certificate of Approval Number 4490(a)-97: This certificate superseded Certificate of Approval Number 4490-96 and was issued to add four different types of scale configurations to the basic Model SL-9000-30. The new models contain the same electronics, load cell, and load cell support structure as previously tested in the Model SL-9000-30M-FFB-US. The series is offered as a single weight range or a multi-interval version with a 7-segment liquid crystal display or a full dot matrix display. The liquid crystal display versions are also available with the remote indicating element. An additional model has been added which has the keyboard and display mounted on a pedestal above the weighing element.

The Model SL-9000-30X-XXX-US-R (remote indicating element) has had the weighing structure removed. The Model OP-9000-R contains only the weighing structure and the platter. The remote indicating and weighing elements must be marked "For Prepackaging Use Only."

Certificate of Approval Number 4490-96: The emphasis of the evaluation was on device design, performance, print format, and compliance with influence factor requirements. The device was tested over a temperature range of 0 °C to 40 °C (32 °F to 104 °F). A load of approximately one-half scale capacity was applied to the scale 105 355 times. The scale was tested periodically during this time. Additionally, tests were conducted using 100 VAC and 130 VAC.

Results of the evaluations and information provided by the manufacturer indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Bill Fishman (NY) and Ed Szesnat (NY) (95-033); Bill Fishman (NY) (95-033A1); Ken Jones (CA) (95-033A2)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5166-01

California Type Evaluation Program
Certificate of Approval
for Electric Meters

For:

Electronic Watt-Hour Meter
Generic Name: Metermaid
Model: 32/1

Submitted by:

Microcustom Ltd.
Rence Park Farm
Chelmondiston, Ipswich IP9 1HB
United Kingdom
Tel: 011 44 1473 780724
Fax: 011 44 1473 780807
Contact: Colin Brinkley

Standard Features and Options

100-130 volts AC
Class 32
TA 15 amps
Kh .5
LED (1 flash = 0.5 watt-hours)
Electro-mechanical register
    0.1 kilowatt-hour minimum display increment
    Six digit non-resettable display
32 amps maximum
Single phase
Single element
60 HZ

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable technical requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: February 13, 2001

Mike Cleary, Director

Microcustom Ltd.
Electronic Watt-Hour Meter
Model: 32/1

Application: These watt-hour meters are to be installed on the load side of the serving utility's master meter in legally submetered RV parks and marinas.

Identification: The meter identification is located on the meter housing.

Sealing: The meter does not require a security seal. The meter case is filled with resin. This seals the meter case and encases the measuring elements, which prevents access to the adjustable components. The line side connections of the meter must be hardwired and contained within a sealable enclosure.

Operation: The meter shall be installed where the meter class equals or exceeds the total capacity in amperes of the thermal overload protectors.

Test Conditions: Two meters were evaluated at the Division of Measurement Standards in Sacramento. The emphasis of the evaluation was on meter accuracy, identification, and permanence. Three tests were performed at 30, 15, and 1.5 amperes. Three power factor tests at 50 percent lag power were performed at 30, 15, and 3 amperes. A creep test and a 0.5 amperes test were also performed. The meters were installed and used for approximately 90 days and retested.

This is a 120 volt, 2-wire meter.

When connecting a Knopp standard to the meter for testing:

- The "A" lead (hot) is connected to the line side (brown wire) of the meter.
- The "B" lead (neutral) is connected to the line side (blue wire) of the meter.
- The "C" lead is not used.
- The "D" lead (current) is connected to the load side (brown wire) of the meter.

NOTE: The meter is marked with arrows pointing to the "load" and "line" sides of the meter.

The results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Dan Reiswig (CA), Sam Chan (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5216-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Vehicle Scale System Controller
Personal Computer
Model: Weigh Station

Submitted by:

Evergreen Software, Inc.
P.O. Box 2184
McCall, ID 83638
Tel: (208) 634-3604
Fax: (208) 634-3483
Contact: Tom Fitzgerald

Standard Features and Options

Motion detection and primary weight indication are provided by the compatible and certified primary weight indicator.

Computer display for operator interaction
Vehicle, customer and product ID
Weigh-in/weigh-out capabilities (inbound and outbound weights are identified on the weight ticket)
Unit of measure: Pound
Manual weight entries (identified on the weight ticket)
Data entry station with numeric keypad
Badge card reader (optional)

Minimum System Requirements:

CRT display
Alphanumeric keyboard
Operating system: Windows 95, 98 and 2000; DOS
Hardware: 50 MHZ Pentium Processor, 32 MB RAM, 2 GB HD
Program Language: Borland Pascal

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable technical requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: January 26, 2001

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Mike Cleary, Director

Evergreen Software, Inc.
Vehicle Scale System Controller
Model: Weigh Station

Application: For use with a certified vehicle scale system. The vehicle scale system controller must be interfaced with certified and compatible weighing and indicating elements.

Identification: The manufacturer's name and the system version number are displayed on the monitor of the system controller when the operator signs on. The manufacturer's name and model number is on a label attached to the front of the data entry station that has the numeric keypad and/or the optional badge card reader.

Sealing: The system controller and data entry station require no provision for sealing and are protected by a password that is retained by the manufacturer. Provisions for sealing metrological parameters are provided by the weighing and indicating elements.

Operation: The system controller accepts gross weights from the electronic indicating element. A transaction is initiated when the deputy weighmaster keys in his identification number via the numeric keypad on the data entry station or inserts his badge if the optional badge card reader is present. Tare weights may be entered using the numeric keypad or stored tare information may be recalled and used to print a weight ticket for single pass transactions. If weigh-in/weigh-out transactions are performed the vehicle information is stored in the system and a weight ticket is printed when the vehicle returns. Manual gross weight entries are permitted to correct erroneous weight tickets and are allowed only when communication between the weight indicator and computer are severed. Manual gross weight entries are not possible with the numeric keypad.

Test Conditions: The Model Weigh Station (version 6.1) with the optional badge reader and numeric keypad was submitted for evaluation. The system controller was evaluated with a vehicle scale interfaced to a Rice Lake Model IQ+510 digital weight indicator (Certificate of Approval Number 4925-99). The emphasis of the evaluation was on the controller operation, marking requirements, print format, card reader performance, and interaction between the system and indicating element. Additionally, motion detection, momentary power loss, and several weigh-in/weigh-out transactions were also examined.

The results of the evaluation indicate the device complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2000 Edition

Tested By: G. Castro (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5258-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Indicating Element
Digital Electronic
Models: 200, 205 and 210
n_{max}: 10 000

Accuracy Class: III/III L

Submitted by:

Cardinal Scale Mfg. Co.
203 East Daugherty St.
Webb City, MO 64870
Tel: (417) 673-4631
Fax: (417) 673-5001
Contact: Stephen Langford

Standard Features and Options

Model 200 NEMA 12 enclosure
Models 205 and 210 NEMA 4X enclosure

Semi-automatic tare (push-button)
Semi-automatic zero (push-button)
Automatic zero setting mechanism (AZSM)
Pound/kilogram conversion (units key)
Test function key
Printer interface
RS232 serial interface
Motion detection
Keyboard tare (Model 210)
Time and date (Model 210)
Gross/net weight accumulation
Gross/net display
AC power supply
Bi-directional RS232 serial interface
Light emitting diode (LED) display
Category 1 physical seal
Automatic "shut-off" and "sleep" battery saving modes (Models 205 and 210)
Preset weight comparators or checkweigher (Model 210)

Options: DC power supply with low battery indication (Models 205 and 210)
Additional RS232 or analog interface

Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable technical requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: February 22, 2001

Mike Cleary, Director

Cardinal Scale Mfg. Co.
Indicating Element
Models: 200, 205 and 210

Application: General purpose indicating element when connected to a compatible weighing/load-receiving element.

Identification: A self-destructive identification label for the Model 200 is located on the front panel. The self-destructive identification label for the Models 205 and 210 is located on top of the indicator.

Sealing: For each model, access to the set-up/calibration switch can be secured with a wire security seal threaded through two drilled head screws on the back panel of the indicator. The screw must be removed to access the internal set-up/calibration switch.

Test Conditions: The Model 210 digital weight indicator with the NEMA 4X enclosure was submitted for this evaluation. The emphasis of the evaluation was on device design, operation, and compliance with influence factor requirements. The indicator was interfaced with a load cell simulator and then tested for accuracy over a temperature range of -10 °C to 40 °C (14 °F to 104 °F). The indicator was interfaced with a load cell weighing element and a printer. The device was tested for discrimination, power interruption, zero tests, and print format. Additionally, the device was tested with a supply voltage of 100 VAC to 130 VAC and 10.8 VDC to 13.2 VDC.

The results of the evaluation and information provided by the manufacturer indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Dan Parks (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5261-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Vehicle Scale Load-Out System Controller/Software
Software: Wonderware Intouch, Version 7.1

Submitted by:

Pacific International Rice Mills, Inc.
P.O. Box 652
Woodland, CA 95776
Tel: (530) 666-1691
Fax: (530) 661-6028
Contact: Dave Holland

Standard Features and Options

Unit of measure: Pound
Gross/net and tare indication
Push-button tare
Motion detection provided by certified indicator
Weighmaster ticket printing
Vehicle, customer, and product identification

System Components:

Vehicle scale, Mettler-Toledo Model 7562 (Certificate of Approval Number 4302(b)-99)
Indicating element, Mettler-Toledo Model JagXtreme (Certificate of Approval Number 4336(c)-01)
Personal computer and printer
Operating system: Windows NT 4.0, Service Pack 5 or newer
Programming language: Visual C++

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: March 12, 2001

_____
Mike Cleary, Director

Pacific International Rice Mills, Inc.
Vehicle Scale Load-Out System Controller/Software
Software: Wonderware Intouch, Version 7.1

Application: Load-out system software for use with certified vehicle scale and indicator.

Identification: Identification of the software is continuously displayed at the top of the video display during load-out operations.

Sealing: The software program is protected by development software and password. Provisions for sealing metrological parameters are provided by the certified weighing and indicating elements.

Operation: The operator uses a personal computer (PC) and software to select the product bin, monitor load bay doors and dust hood, control the load-out operation, and print a weighmaster certificate.

Test Conditions: The emphasis of the on-site evaluation was on the operation of the load-out system, interaction with the certified vehicle scale and indicator, and weighmaster ticket format. A PC, loaded with Windows NT and Wonderware Intouch, Version 7.1 software, was connected to a Mettler-Toledo Model 7562 vehicle scale (Certificate of Approval Number 4302(b)-99), a Mettler-Toledo Model JagXtreme indicator (Certificate of Approval Number 4336(c)-01), and the other load-out system components. Several load-out operations were performed.

Results of the evaluation indicate the software complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: K. Jones (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5268-01

California Type Evaluation Program
Certificate of Approval
for Measuring Devices

For:

OSC/Intellimeter (Electronic)
Watt-Hour Measurement System
Models: A-120 and AB-120

(INDOOR USE ONLY)

Submitted by:

OSC/Intellimeter
Ohio Semitronics of CA Corporation
1051 Serpentine Lane, Suite 400
Pleasanton, CA 94566
Tel: (925) 485-9490
Fax: (925) 485-9537
Contact: Don Shibley

Standard Features and Options

- Class 100 (colored red) or Class 200 (colored yellow) current transformers
- Designed for 120-208V, 120-240V and 50-60 Hz power supplies
- Communicates with central station via power line carrier (existing wiring) or fiber-optic cable (optional)
- Stores tenant's watt-hour usage in nonvolatile EEPROM memory
- Equipped with a tamper alarm
- No watt-hour register is provided on the meter (see lobby display)
- Model A-120 has one meter (single channel) on a printed circuit board
- Model AB-120 has two meters (dual channel) on a printed circuit board

Type CS-1 Central Station:
- Communications and data storage center for the system
- Stores billing data in nonvolatile EEPROM memory
- Sends information to lobby display
- Provides telephone access to data for bill processing

Lobby Display:
- One to 20 displays can be centrally located
- Tenants can access their current meter readings by using their unique code numbers

Option: Repeater(s) to establish or enhance system communication (not tested)

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: June 29, 2001

_____
Mike Cleary, Director

OSC/Intellimeter
Watt-Hour Measurement System (Electronic)
Models: A-120 and AB-120

Application: For use as a watt-hour metering system in legally submetered electric service applications.

Identification: A supplemental identification label is applied to the middle of the meter case cover and the original identification label is located on the inner CPU board chassis.

Sealing: The main circuit board, located inside the meter enclosure, has a sealable cover and provisions for a wire security seal which protects the calibration and configuration adjustment mechanisms. The meter enclosure is supplied with four screws of which two are drilled for a wire security seal to be affixed diagonally across the face of the meter enclosure after installation. This prevents access to the connection terminals for line voltage and for current sensors.

Operation: These watt-hour energy meters are not self-contained but use current transformers (CT's) to sense the customer's electrical usage and to drive the watt-hour meter and register. The current sensor output is proportional to the tenant's current load and is connected to the central processing unit (CPU) within the meter. The CPU processes the information. A lobby display indicates accumulated kilowatt-hour values.

Test Conditions: The standard "gate mode" is an operational mode of OSC/Intellimeter provided for use in performing accuracy tests. The OSC/Intellimeter under test is used in conjunction with a terminal and an OSC/Intellimeter test interface unit to automatically pass a specified amount of energy through a comparison standard. "Gating" is accomplished by closing and opening the voltage potential connected to the standard. Percentage registration of the OSC/Intellimeter is determined by comparing the amount of energy specified in "gate mode" to the registration of the standard. Alternatively, OSC/Intellimeters can be tested with any snap switch operated test set using software and a special test interface unit provided by OSC/Intellimeter Corporation. A personal computer (PC) is connected to the test interface unit which is, in turn, connected to the OSC/Intellimeter under test. All other connections are the same as with any CT-type meter. Using the PC, the tester instructs the OSC/Intellimeter to measure a preset amount of energy (watt-hours). While measuring, an indicator light is activated.

Three Model AB-120 meters were submitted for evaluation. The meters were tested at the Division of Measurement Standards lab and then installed in an apartment building for permanence testing purposes. The meters were retested after 60 days of use. The meters were subjected to a combined total of over 100 tests from 1.5 amps to 60 amps at both unity and 0.5 power factors at the lab and in the field.

Results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: D. Reiswig and J. Raspino (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

California Type Evaluation Program
Certificate of Approval
for Measuring Devices

For:

Compressed Natural Gas (CNG)
Retail Motor Fuel Dispenser, Electronic Computing
Model: SGX.XXXX*
Capacity: Maximum Total Price: $9999.99
Maximum Total Volume: 999 999
Maximum Unit Price: $9.999
Accuracy Class: 2.0

Submitted by:

Greenfield Compression, Inc.
909 Bowser Road
Richardson, TX 75081
Tel: (972) 889-2400
Fax: (972) 234-4829
Contact: Tony Feger

Standard Features and Options

Gilbarco Advantage Series computing register
Micro Motion Model RFT 9739 Version 3.6 transmitter
Battery back-up for 72 hours
Volume totalizer maximum: 9 999 999.999

Micro Motion Model DH038 sensor
Back lighted liquid crystal displays
Temperature compensation fill
Design pressure: Maximum 5000 PSI

Category 2 method of sealing (see Sealing on Page 2)
Option: Card reader in dispenser (CRIND)

Model Designation:

Basic Model	X	.X	X	X* or XX
SG	1 = Single hose 2 = Two hoses	1 = No CRIND 2 = CRIND	2 = Storage pressure 5000 psig, P30 3 = Storage pressure 5000 psig, P36/P30 4 = Storage pressure 5000 psig, P36e P30 (3000 psig) and P36 (3600 psig) represent fill pressure and associated hose	User Defined Nozzle Type Non-metrological
* X for nozzle type 0 through 9 XX for nozzle type 10 and above				

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: July 13, 2001

Mike Cleary, Director

Greenfield Compression Inc.
Compressed Natural Gas (CNG), Retail Motor Fuel Dispenser
Electronic Computing
Model: SGX.XXXX

Application: For use as a dispenser in retail motor fuel service stations for measuring CNG as an automotive fuel. The mass flow meter measures the total mass passed through the sensor and is displayed as gasoline gallon equivalent: 5.660 lb of natural gas (GGE). The GGE, the total computed price, and the price per unit are displayed on a Gilbarco electronic computing register. For use with approved and compatible card reader (island or CRIND).

Identification: The required information is located on the outside surface of the dispenser housing.

Sealing: The meter calibration and configuration parameters are accessed with a switch located inside the housing of the mass flow transmitter Model 9739. The Model 9739 can be sealed by removing the transmitter cover, moving the switch to the ON position, and pressing the SENSOR ZERO button to initiate the security function. Replace the cover and thread a wire security seal through the holes in the plastic clamp assembly and the plastic cap that covers the clamp mounting screw. The clamp assembly secures the transmitter cover to the base.

The Gilbarco electronic computing register has a magnetic keypad inside the register housing for accessing the configuration event counter.

Operation: The delivery hose is connected to the fill connector on the receiving vehicle. The dispenser is turned on by moving the interlock handle to the "on" position. After filling, the interlock lever must be in the "off" position before returning the nozzle to the dispenser receptacle.

Test Procedures: A checkweigh scale of sufficient capacity and resolution should be used as a test standard (the minimum increment of the scale should be no greater than one-third the smallest tolerance applied to the dispenser). Conduct at least two increasing/decreasing load and shift tests to determine scale performance and repeatability. If possible, calibrate the scale to minimize need for error weight.

1. Tare or zero a test cylinder and add enough test weights to approximate a target net weight of the test draft.
2. Record the error, remove the test weights to verify there is no change in the net zero condition of the scale, and determine a correction value if necessary.
3. Connect the hose to the cylinder and dispense product until the target weight has been reached.
4. Disconnect the hose and compare the indicated scale net weight to the indicated dispenser weight (display mass on the dispenser by pushing enter two times on the Gilbarco key pad, press enter again to return the display to GGE). Divide the mass indication by 5.660 to obtain the correct GGE value and compare this value to the GGE value displayed on the dispenser. The results must agree exactly.

Test Conditions: This certificate supersedes Certificate of Approval Number 4723-98 and is issued to include the use of a card reader (island or CRIND) with this dispenser and to clarify that the digits at the end of the model number represent nozzle types. The Sulzer Model SG1.129 dispenser, interfaced with a Gasboy Model 2000S-CFN-DET card reader (Certificate of Approval Number 2879(c)-99), was submitted for evaluation. The emphasis of the evaluation was on device design, performance, and interaction with the card reader. The system was tested for agreement of indications and power interruption requirements. The previous test conditions are listed below for reference.

Certificate of Approval Number 4723-98: The Model SG2.134 dispenser was submitted for a field evaluation using a Gilbarco Advantage Series electronic computing register and Micro Motion mass flow metering system (RFT 9739 Version 3.6 transmitter and DH038 sensor). The emphasis of the evaluation was on the device design, performance, and permanence. Initial tests were conducted at several flow rates, pressure ranges, and delivery amounts. Similar tests were repeated after approximately 30 days of use.

The results of the evaluations indicate the system complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Dan Reiswig (CA), Charles Nelson (CA) 4723-98, Norman Ingram (CA) 4723(a)-01

Information Updated Reviewed By:

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5099-01

California Type Evaluation Program
Certificate of Approval
for Water Meters

For:

Water Meter
Single Jet
Model: Domaqua
Meter Size: 5/8"
Maximum Flow Rate: 15 gpm
Minimum Flow Rate: 0.25 gpm
Minimum Increment: 0.005 gallon (Dial Portion)

Submitted by:

Viterra Energy Services
7250 Engineer Road
San Diego, CA 92111
Tel: (858) 737-2719
Fax: (858) 737-2701
Contact: Frank Barz

Standard Features and Options

Unit of measure: Gallons Only
Magnetic drive
Nickel plated brass

Water meter components:

Measurement register with plastic lens
Measuring chamber (nickel plated brass)
External threaded pipe connection (3/4")
Electronic pulse output (not evaluated)

NOTE: Approved for use when installed in **HORIZONTAL** or **VERTICAL** flow positions with indications accessible to the customer

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable technical requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: January 30, 2001

_____
Mike Cleary, Director

Viterra Energy Services
Single Jet Water Meter
Model: Domaqua

Application: Approved for use as a domestic cold-water meter when installed in **HORIZONTAL** or **VERTICAL** flow positions. The flow direction indications are cast into the main case.

NOTE: Written installation instructions shall be included with each meter. Additionally, field installations should be verified according to the manufacturer's installation requirements.

Identification: The manufacturer's name and model designation are silk-screened on the register face. The serial number prefaced with "S/N" is hot-stamped on the permanent tamper evident register lens.

Sealing: The plastic register lens provides a tamper-proof seal of the register and the calibration components. Any attempt to remove the register lens will visibly damage the lens, thus indicating an attempt at tampering. All calibration adjustments are made at the manufacturer's facilities. The pulse wire (not evaluated) is secured to the register with a screw-on connector, which has provisions for a wire security seal that can be attached to a corresponding fitting on the register face.

Operation: The water meter utilizes a single-jet impeller type measuring element, a magnetically driven register, and a measuring chamber with external threads. The single-jet measuring element converts flow velocity into a volumetric registration in gallons. Water flow should be free of foreign material that could become lodged in the meter's inlet screen and affect its accuracy. Additionally, the water meter can be equipped with a pulse output for interface with a remote reading system. The electronic pulse output was not evaluated.

Register (cyclometer) values:

0000	000	0	The first four most significant digits are gallons in black.
0000	000	0	The next three digits are gallons in red.
0000	000	**0**	The least significant digit is white and represents gallons in tenths.

The minimum increment of the dial portion of the register represents five thousandths in gallons.

Test Conditions: The Model Domaqua was submitted for evaluation. The emphasis of the evaluation was on the device design, marking requirements, and performance. Three devices were randomly drawn and tested with normal, intermediate, and minimum flow rates. After a successful initial flow rate test, a permanence test was conducted which consisted of approximately 160 000 gallons of throughput (recirculation) over a 60-day period. The meters were retested at the normal, intermediate, and minimum flow rate.

The results of the evaluation and information provided by the manufacturer indicate the device complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2000 Edition.

Tested By: Dan Resiwig (CA) and Sam Chan (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5100(a)-01

California Type Evaluation Program
Certificate of Approval
for Measuring Devices

For:

Water Meter
Positive Displacement
Model: C-700 Series
Size: See Table Below
Maximum Flow Rate: See Table Below
Minimum Flow Rate: See Table Below

Submitted by:

ABB Water Meters, Inc.
1100 S.W. 38th Avenue
Ocala, FL 34474
Tel: (800) 874-0890
Fax: (352) 368-1950
Contact: John Corey

Standard Features and Options

Unit of measure: Gallons or cubic feet
Magnetic drive
Electronic pulse output (not evaluated)*
Bronze main case
External threaded spuds

Meter Description:

Model	Description	Flow Rate (gpm)
C-700	5/8" x 1/2" Bronze and Polymer Case	1/4 - 25
	5/8" x 3/4" Bronze and Polymer Case	1/4 - 25
	3/4" x 3/4" Bronze and Polymer Case	1/2 - 30
	1" Bronze Case	3/4 - 50

* **Register Model:** Inside R
Digital B Pulser
Scancoder RS Pulser

NOTE: Approved for use when installed in a ***"HORIZONTAL"*** or ***"VERTICAL"*** position according to the manufacturer's instructions only.

These devices are to be installed where they are protected from excessive heat and freezing conditions.

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: July 6, 2001

Mike Cleary, Director

ABB Water Meters, Inc.
Water Meter, Positive Displacement
Model: C-700 Series

Application: Approved for use as a domestic cold-water meter only when installed in a ***"HORIZONTAL"*** or ***"VERTICAL"*** position. The flow direction indications are cast into the single pipe connector, main case.

NOTE: Written installation instructions shall be included with each meter. Additionally**,** field installations should be verified according to the manufacturer's installation requirements.

Identification: The manufacturer's name and model designation are silk-screened on the register indicating face. The serial number prefaced with "S/N" is engraved on the outlet of the meter body.

Sealing: The water meter can be sealed with a wire security seal threaded through a hole on the register locking cap to a hole on the measuring chamber. Additionally, the bottom plate can be sealed with a wire security seal threaded through a hole in the bottom bolts.

Operation: The Model C-700 is an oscillating piston style, positive displacement water meter. The water meter utilizes a piston which the water rotates in a measuring chamber, each piston revolution being equivalent to a known volume of water. The piston movement is transferred by a magnetic drive to a straight reading sealed register.

Test Conditions: This certificate supersedes Certificate of Approval Number 5100-00 and is issued to add the cubic feet unit of measure option feature, register Models C-700 InsideR, C-700 Digital, C-700 Scancoder, C-700 B pulser, and C-700 RS pulser. The current and previous test conditions are repeated below for reference.

Certificate of Approval Number 5100(a)-01: The Model C-700 InsideR in gallon units, C-700 Scancoder in cubic feet units, and C-700 RS pulser in gallon units were submitted for evaluation. The emphasis of the examination was on device design, operation, marking requirements, and performance. Three tests each at 15 gpm, 3 gpm, and 1/4 gpm were conducted on the register designs listed.

Certificate of Approval Number 5100-00: This Certificate was issued to change the name of the company from Kent to ABB Water Meters, Inc. The ABB Model C-700 was evaluated on the marking requirements and the provision for sealing. Evaluation of the device design, performance, and installation requirements is based on previous testing conducted for Certificate of Approval Number 2148-82.

The results of the evaluations and information provided by the manufacturer indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: J. Raspino (CA), D. Reiswig (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5270-01

California Type Evaluation Program
Certificate of Approval
for Measuring Devices

For:

Vehicle Tank/Wholesale Positive Displacement
Liquid Measuring Device
Models: CM Double Capsule Series (See Below)

Submitted by:

Carter Ground Fueling, Inc.
671 W. 17th Street
Costa Mesa, CA 92627
Tel: (631) 476-6992
Fax: (631) 476-6973
Contact: Pete Hlavac

Standard Features and Options

Model CM:	**Flange Size**	**Flow Rate (GPM)**
CM 2000	3 inch	53 to 530
CM 2500	4 inch	66 to 760

Ni-resist cast iron
Left or right hand discharge
Rotor assembly with four carbon vanes

Options:

Rate of flow indicator
Mechanical Veeder Root register with ticket printer
Vapor eliminator

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: June 29, 2001

Mike Cleary, Director

Carter Ground Fueling, Inc.
Vehicle Tank/Wholesale Positive Displacement
Liquid Measuring Device
Models: CM Double Capsule Series

Application: These meters are used for measuring Jet A aviation fuel and can be used for vehicle mounted or stationary applications. These meters are approved for use with certified and compatible equipment.

Identification: The required manufacturer's identification badge is located on the side of the meter case.

Sealing: The calibration gear train, located in the calibration gear train housing, connects the end shaft of the meter rotor assembly to the mechanical register. A threaded plug is screwed into the calibration gear train housing and has provisions for a wire security seal. The threaded plug prevents access to the calibration adjusting screw located in the calibration gear train housing.

Operation: The meter rotor shaft is connected to a calibration gear train, which is connected to a mechanical register. Liquid pumped through the meter causes the meter rotor to turn and the register to record volume passed through the meter for delivery.

Test Conditions: A Model CM 2500 was submitted for evaluation. Emphasis of this evaluation was on accuracy, permanence and identification requirements. The meter was installed on an aircraft refueling truck. Three tests at 607 gpm, 353 gpm, and 55 gpm were conducted. After more than 1 480 000 gallons were pumped through the meter, tests were repeated at approximately the same flow rates. An air elimination test was also conducted.

The results of this evaluation indicate the meters comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Dan Reiswig

Type Approval Number: 169

Control Number: 3217

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5271-01

California Type Evaluation Program
Certificate of Approval
for Measuring Devices

For:

Point-of-Sale
Electronic Cash Register (ECR), Service Station Controller, Retail Motor Fuel Device
Generic Name: Retalix Storeline V8 System

Submitted by:

Retalix USA Inc.
290 Bobwhite Court, Suite 320
Boise, ID 83706
Tel: (208) 338-8410
Fax: (208) 338-8934
Contact: Bob Smith

Standard Features and Options

Component Name	Model Number
Personal Computer – Fujitsu Team POS	9535
S.S.C. (Allied Andi Site Controller)	STD-WYN-2-24 or STD-GIL-2-24
Scanner	NCR 7870
Dynakey monitor with dynamic programmable keys	NCR 5952
Hand-held scanner	NCR 7890

Primary indications are provided by compatible and certified retail motor fuel devices.

ECR controls up to 32 fueling sites
Cash/credit
Stacking memory (4 transactions per fueling site)
Card reader
Local area network (LAN)
Pre-pay/post-pay
Receipt printer
Electronic journal
Check reader

Minimum System Requirements:

- Computer dynamic key display
- Operating system: Windows 95, Windows 98, Windows NT or Windows NT Workstation or higher
- Hardware: 300 MHZ Pentium Processor, 32 MB RAM, 1 GB hard drive or higher
- Language: Delphi and Microsoft Visual C++
- Software: Retalix Storeline V8 System (Version/Release 8.1.3.55 or higher)

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: July 9, 2001

Mike Cleary, Director

Retalix USA Inc.
Point-of-Sale Electronic Cash Register (ECR)
Retail Motor Fuel Device
Generic Name: Retalix Storeline V8 System

Application: For use as a point-of-sale (POS) system in retail service stations. The ECR must be interfaced with compatible and certified retail motor fuel dispensers.

Identification: The software application version number is displayed on the monitor of each terminal/register. When a cashier is signed on, the information is displayed in the bottom center of the Win/POS screen. If the register is not signed on, press the [SIGN ON/OFF] hard key to activate the screen.

Additional identification information is located as follows:

Model	Location of Identification Tag
9535	Right side of terminal
NCR 7890 NCR 5952	Back of device
NCR 7870	Under scanner platter
STD-WYN-2-24	Front site controller

Sealing: The POS system controls no metrological function that requires the use of a security seal.

Operation: The POS system is capable of storing price look-up information for items entered through the keyboard or Universal Product Code read by a scanner. Transactions can be processed through any terminal to finalize a sale or add to an existing transaction. The Retalix Storeline V8 System has a pre-pay function that prints out a temporary receipt showing the amount pre-paid, which can be recalled and finalized after fuel has been dispensed.

Test Conditions: The Retalix Storeline V8 System is a modified version of the ISS45 System (Certificate of Approval Number 4207(a)-96) that was approved for use as a POS system with scales or scanner/scale combinations. The system was tested at the manufacturer's facility using a Wayne dispenser head with simulator, Allied Andi Controller (Model SSC, STD-WYN-2-24), and a Fujitsu PC with TeamPOS Software. The emphasis of the evaluation was on interaction of the Retalix Storeline V8 System software with a retail motor fuel dispenser and controller system. The system was tested for receipt information, card transactions, look-up code transactions, and pre-pay and post-pay transactions. The permanence test was waived because this software was previously approved as a POS system.

The results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: D. Reiswig (CA)

CC Control Number:

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: -01

California Type Evaluation Program
Certificate of Approval for Weighing Devices

For:

Service Station Console
Digital Electronic
Model: Decade 2400 Series*
Total Money: $999.99
Total Quantity: 999.999 Units
Total Price Unit: $9.999/Unit

Submitted by:

Wayne Division Dresser Industries, Inc.
124 West College Avenue
Salisbury, CA 21802
Tel: (512) 388-8323
Fax: (512) 388-8456
Contact: Mike Gallo

Standard Features and Options

* The specific models of devices covered by this Certificate are listed on Page 2.

Controls up to 16 hoses with capability to expand to 24 hoses
Controls up to six products
Prepay/postpay
Preset Money
Preset Volume
Allocation control
Previous sale recall (stacks one sale)
Remote pricing
Two-tier pricing
Management totals

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: July , 2001

_____
Mike Cleary, Director

Wayne Division
Dresser Industries, Inc.
Service Station Conosle
Model: Decade 2400 Series

Application: For use in conjunction with certified and compatible retail motor fuel dispenser in retail service stations. Consoles must be used with an uninterruptable power supply or some other means to retain stacked sale information in the event of a power loss.

Identification: The identification badge is riveted to the lower front edge of the console.

Model Designation: The specific model numbers of devices covered by this Certificate are listed below. The model number may be followed by "CR" suffix to indicate compatibility with cash register.

Model Number	Number of Hoses	Description
CC/SY 2400/4	4	
CC/SY 2400/6	6	
CC/SY 2400/8	8	
CC/SY 2400/12	12	
CC/SY 2400/16	16	
EC/SY 2400L/Suffix		Pulsing-Type Electronic Central (Site Controller)
EC/SY 2400/Suffix		Electronic Central (Site Controller)
PI/SY 2400/Suffix		Pump Interface Cabinet (See Note 2)
DD/SY 2400/Suffix (See Note 4)		Data Distribution Cabinet (See Note 3)

NOTES:

1. Suffixes 13 and 17 denote additional console for controlling fueling sites beyond 12 or 16, respectively.
2. Pump Interface Cabinet required with Pulsing-Type Electronic central site controller.
3. Data Distribution Cabinet required with Electronic central site controller.
4. Numbers and letters indicated different interface configuration.

Test Conditions: This certificate supersedes Certificate of Approval Number 1996(b)-88 and is issued to

The previous test conditions are listed below for reference.

Certificate of Approval Number 1996(b)-88:

Certificate of Approval Number 1996(a)-82:

Certificate of Approval Number 1996-81:

Results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition.

Tested By:

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5108-01

California Type Evaluation Program
Certificate of Approval for Weighing Devices

For:

Portable Axle-Load Weigher
Digital Electronic
Models: AX900 and AX920
n_{max}: 1200
Capacity: 30 000 lb to 60 000 lb per Pair
Division: 50 lb
Platforms: 7' x 32", 5.5' x 32", and 3.5' x 32"
Accuracy Class: IIII

Submitted by:

Intercomp Corporation
14465 23rd Avenue North
Minneapolis, MN 55447-3438
Tel: (763) 476-2531
Fax: (763) 476-2613
Contact: Matt Young

Standard Features and Options

Semi-automatic (push-button) zero
Initial zero setting mechanism (IZSM)
AC/DC power adapter
Automatic zero setting mechanism (AZSM)
12 VDC battery operation (rechargeable)
Digital multi-point calibration

The Model PT20 has the following additional features:

Multi-channel inputs
Printer (PT20 only)

Load cells: Sensortonics Model 65023A10K-10K (Certificate of Approval Number 3137(a)-89) or certified equivalent

Optional Model AX920 indicates a scale designed for installation in a pit

NOTE: Axle-load weighing elements may be electronically connected to the Intercomp Model PT20 or the GP1000/2000 indicating element (Certificate of Approval Number 4696-97), or a certified and compatible indicating element. The Intercomp Model PT20 with the multi-channel inputs and printer is the electronic equivalent of the Intercomp Model GP1000/2000 indicating element. However, the Model PT20 has a detached A/D converter board that is physically located in the weighing element.

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: July 27, 2001

Mike Cleary, Director

Intercomp Corporation
Portable Axle-Load Weigher
Models: AX900 and AX920

Application: For use in law enforcement as an axle-load weigher either individually or in pairs.

Identification: The indicator identification badge is located on the front panel. The identification badge for each weighing element is located on the side of each element.

Sealing: The weighing element junction box can be sealed with a security seal threaded through two drilled head screws located on the right side of the device. This prevents access to the adjustment potentiometers inside.

The Model PT20 and GP1000/2000 indicating elements can be sealed with a security seal threaded through two drilled head screws located on the right side of each device.

Test Conditions: Two Model AX900 (7' x 32", 30 000 lb x 50 lb) weighing elements were evaluated electronically attached to an Intercomp Model PT20 indicating element. Several increasing/decreasing and shift load tests were conducted using 44 000 lb of known test weights. Each weighing element was tested to capacity (30 000 lb). A permanence test was performed using the minimum use criteria requirements and re-tested as described above. The Model PT20 indicating element was evaluated for device design, performance, multi-channel input capability, summing capabilities, print format, and compliance with influence factor requirements. The separate A/D converter module was interfaced to a load cell simulator and the Model PT20 indicating element, and tested over a temperature range of -10 °C to 40 °C (14 °F to 104 °F).

The results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2000 Edition

Tested By: G. Castro (CA) and K. Jones (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5273-01

California Type Evaluation Program
Certificate of Approval
for Measuring Devices

For:

Mass Flow Meter
Digital Electronic
Sensor Model: CNG050
Mass Flow Transmitter Model: 2700 Series
Flow Rates: 2.5 lb/min to 130 lb/min
Meter Size: 0.5-inch Diameter Tube Inlet
Class: 2.0

Submitted by:

Micro Motion, Inc.
7070 Winchester Circle
Boulder, CO 80301
Tel: (303) 530-8231
Fax: (303) 530-8459
Contact: Michael J. Keilty

Standard Features and Options

5000 PSI (345 BAR) pressure rating
Frequency/pulse, 4-20 ma, HART and Modbus RS485 outputs

Sensor Model Number	Transmitter Model Number
CNG050yyyyyyyyyyyy* (18 characters total)	2700yyyyyyyyyW* (14 characters total)

* Numbers or letters in the model number represented by a "y" represent non-metrological features of the device.
However, the 14th character of the transmitter model number must be a "W" which represents the weights and measures secure mode of sealing.

Options: NEMA 4X enclosure
Model 275 HART communicator
ProLink II communications software for PC
Local display

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: July 13, 2001

Mike Cleary, Director

Micro Motion, Inc.
Mass Flow Meter
Sensor Model: CNG050
Mass Flow Transmitter Model: 2700 Series

Application: For use in stationary applications. The mass flow meter may be used to measure compressed natural gas.

Identification: The sensor and transmitter have separate identification tags. The identification information for the sensor is located on the sensor body. The identification information for the transmitter is located on the side of the main enclosure.

Sealing: Entry into the calibration and configuration mode is accomplished by moving the position of a switch (labeled to show positions as "configure" and "operate") or moving a jumper (connected across terminals 7 and 8 when in the "secure/operate" mode) located inside the transmitter. Access to the security switch or jumper is protected by threading a wire security seal through the drilled head cap screw securing the end cap clamp to the electronics or display cover (at one end of the main enclosure) and another drilled head cap screw securing the other end cap clamp to the terminal access cover (at the opposite end of the main enclosure).

The CNG050 sensor has no adjustable components that require the use of a security seal.

Operation: The mass flow transmitter Model 2700 has an optional 16 character, two-line liquid crystal display. Two operation buttons activated by an optical switch are located below the display. The "Scroll" button is used to increment the display through the range of process variables such as flow rate, density, temperature, and total quantity. The "Select" button is used for various maintenance functions. Calibration and configuration may also be accomplished through the use of the hand-held communicator. Additionally, the transmitter may be calibrated and configured by the use of a personal computer running the ProLink II software provided by the manufacturer. The transmitter will not respond to changes from the HART communicator or the ProLink II software while the security switch or jumper is in the secure/operate position. The HART communicator or the ProLink II software may still be used to view process variables while the security switch or jumper is in the secure/operate position. To verify the correct position of the security switch or jumper without breaking the security seal, observe the functioning of the meter under flowing conditions. If it is in the configure mode, the meter flow rate will stay at zero and the total will not increment.

Test Conditions: The mass flow meter Model CNG050 (0.5 inch diameter tube inlet) and mass flow transmitter Model 2700 were submitted for evaluation installed in a stationary field location. The meter was tested gravimetrically while measuring compressed natural gas (0.6 to 0.8 specific gravity). The emphasis of the evaluation was on device design, operation, and performance. Multiple test drafts were conducted at various flow rates ranging from 2.5 lb/min to 105 lb/min while results of the same flow rates were compared for repeatability. The tolerance of 1.5% was applied as per the mass flow meter code for accuracy class 2.0 devices. Additionally, requirements for power interruption and low-flow cut-off were evaluated. The tests were repeated after approximately 60 days and 230 000 pounds of throughput.

Results of the evaluation indicate the device complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Norman Ingram (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5274-01

California Type Evaluation Program
Certificate of Approval for Measuring Devices

For:

Wholesale Meter Controller
Digital Electronic
System Model: ELC2280A

Submitted by:

Murray Equipment, Inc.
2515 Charleston Place
Fort Wayne, IN 46808
Tel: (219) 484-0382
Fax: (219) 484-9230
Contact: Steve Murray/Craig Reese

Standard Features and Options

Model ELC2280A consists of a programmable logic controller with a touch screen operation interface, and a generic computer using a Windows 9X operating system and running "Murray Remote System" software written in Microsoft Access. Software should have a revision date of April 6, 2001 or later (displayed on opening screen). The recording element is a generic PC printer that can print up to five (number is programmable) copies of an invoice. Invoices are numbered sequentially.

See "Operation" on Page 2 for additional information.

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: July 13, 2001

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Mike Cleary, Director

Murray Equipment, Inc.
Wholesale Meter Controller
System Model: ELC2280A

Application: For use as an automated control system for the operation of a loading rack terminal pumps, valves, and any approved and compatible wholesale meters to dispense a preset amount of product.

Identification: The ID plate is a tamper evident, metal foil, self-adhesive label located on the side of the controller case.

Sealing: A clear cover over the indicator prevents access to the control buttons on the panel face. The buttons are used to calibrate, configure, or enable other capabilities of this device, which are not used for this application. The cover is affixed to the front of the enclosure by one way machine screws from the inside and barrel nuts fitting into recesses in the clear cover from the outside. The nuts are drilled to allow the use of a wire security seal.

Operation: The controller may be installed in different configurations depending upon the needs of the user. System may be installed as a "stand alone", but tested installation was a remote authorization unattended loading rack terminal. The driver must enter the information requested from the data entry prompts; authorization number, truck identification, driver identification, etc., to begin the filling operation. Pumping can be paused for up to ten minutes by pushing the stop button to accommodate trucks with multiple compartments. Pumping can be resumed by pushing the start button to continue to the preset amount. Invoices are printed by pushing the print button after pumping has been completed. All "original" invoices have the legend "Copy X of Y" in the upper right hand corner below the five-digit invoice number. Additional copies can be printed by pushing the print button as long as a new operation has not been initiated. Each print request prints the same number of copies programmed for the "originals". All additional copies are marked as "Additional Driver Requested Copy" below "Copy X of Y" in the upper right hand corner of the invoice. The system can generate sequential invoice numbers up to number 32767 at which time it restarts at number 00001.

Test Conditions: The emphasis of the evaluation was on the system's design, operation, accuracy, identification, programmable features, interaction with accessory equipment, and on the format and content of the printed invoice. The system, as tested, consisted of a Contrec Model 414 batch controller (used as an indicator only) and an Allen Bradley Model Micrologic 1500 programmable logic controller interfaced with the loading rack terminal pumps, valves, a Micro Motion mass flow sensor Model DS-300, and a Model 9739 transmitter. A field evaluation was conducted at a fertilizer distribution plant. System was interfaced with the plant's host computer running "Murray Office System" software last revised April 6, 2001. Product used was a 32% urea ammonium nitrate solution. A retest for permanence was conducted after 55 days. All dispensed amounts were checked against a Fairbanks Morse motor truck scale that had been prechecked for accuracy. The acceptance tolerance of 0.3% as specified in the Mass Flow Meter Code of Title 4, California Code of Regulations, 2001 Edition, Section 3.37, was applied.

The results of the evaluation and information provided by the manufacturer indicate this device complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: D. Reiswig (CA) and J. Raspino (CA)

TA Number: 201

Control Number: 3702

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5275-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Bench Scale, Digital Electronic
Model: AM Series
n_{max}: 3000
Capacities: 3000 g (6 lb), 6000 g (12 lb),
15 kg (30 lb), 30 kg (60 lb)
Platform: 9.6" X 11.8" and 11.1" X 13.3"
Class: III

Submitted by:

Universal Weight Enterprise Co.
2~5 Floor, No. 39 Pao Shing Rd.
Hsin Tien City, Taipei Hsien
Taiwan 231
Tel: 011-86-22-918-0121
Fax: 011-86-22-918-3652
Contact: Alvin Wu

Standard Features and Options

Model	Capacity	
AM-3000	3000 g x 1 g	6 lb x 0.002 lb
AM-6000	6000 g x 2 g	12 lb x 0.004 lb
AM-15K	15 kg x 0.005 kg	30 lb x 0.01 lb
AM-30K	30 kg x 0.01 kg	60 lb x 0.02 lb

Semi-automatic zero
Automatic zero setting mechanism (AZSM)
Initial zero setting mechanism (IZSM)
Semi-automatic tare
Battery saving feature (auto shut-off)
AC/DC adapter
Pound/kg conversion

Low battery annunciator
Battery recharge indicator
Category 1 physical seal
Center of zero annunciator
Battery power supply
Gross/net display

Options: Customer display
Display backlight

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: July 19, 2001

Mike Cleary, Director

Universal Weight Enterprise Co.
Digital Electronic Bench Scale
Model: AM Series

Application: General purpose bench scale.

Identification: An identification plate is riveted to the side of the device.

Sealing: The top half of the scale must be removed to access the calibration switch. Removal of the case can be prevented using a wire seal through a hole in the screw that fastens the bottom and top halves of the case.

Test Conditions: The emphasis of the evaluation was on device design, marking requirements, performance, and compliance with influence factor requirements. Two models, AM-3000 (3000 g x 1 g) and AM-30k (30 kg x 0.01 kg), were submitted for this evaluation. Several increasing/decreasing load and shift tests were conducted. Each device was tested over a temperature range of -10 °C to 40 °C (14 °F to 104 °F). Additionally, tests were conducted using a DC power supply varied between 6.5 VDC to 13.2 VDC. A load of one-half scale capacity was applied to each scale at least 100 000 times.

The results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Dan Parks (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5276-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Indicating Element
Digital Electronic
Model: T2000 Series
n_{max}: 10 000

Accuracy Class: III/III L

Submitted by:

Tru-Test Limited
P. O. Box 51-078
Pakuranga, Auckland
New Zealand
Tel: 011-649-978-8888
Fax: 011-649-978-8889
Contact: Lawrence Blount

Standard Features and Options

The T2000 Series consists of the GT2000 and ST2000. The ST2000 is metrologically the same as the GT2000; however, it has additional features for information management.

Semi-automatic zero setting mechanism
Automatic zero setting mechanism
Category 1 audit trail
lb/kg selectable (see Operation on Page 2)
RS232 and RS485 interface
Ticket printing
Initial zero setting mechanism
Multi-interval capability
Alphanumeric dot matrix display
Internal battery option
Low battery warning messages

Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: August 2, 2001

Mike Cleary, Director

Tru-Test Limited
Indicating Element
Model: T2000 Series

Application: General purpose indicating element to be interfaced with an approved and compatible weighing element.

Identification: All required information is located on the face of the indicator except for the serial number which is located on the rear of the indicator.

Sealing: The indicator uses a Category 1 audit trail with two event counters (calibration and configuration). To access the event counters press the "SETUP" key, then press the soft key with the arrow pointing to the right, and then press the "ABOUT" soft key. This displays the System Information screen which contains the calibration and configuration counter information on the lower right. To exit this screen press the "ESCAPE" key, which returns to the weighing screen.

Operation: Units are selected during setup. The units can be set to "kg only", "lb only", or "kg or lb". If the "kg or lb" option is selected, the user can change the units by placing the cursor over the unit symbol on the live weighing screen and pressing "ENTER".

Test Conditions: A Tru-Test Model ST2000 indicator was submitted for testing. The emphasis of this evaluation was on device design, operation, printing functions, and compliance with influence factor requirements. The indicator was interfaced with a load cell simulator and tested for accuracy over a temperature range of -10 °C to 40 °C (14 °F to 104 °F). The device was tested over a voltage range of 10.7 VDC to 16.5 VDC. Additionally, the indicator was connected to a load cell and printer to verify compliance with zero, zone of uncertainty, motion detection requirements, and printing format.

Results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: K. Jones (CA)

TA Number: 181

Control Number: 3542

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5272-01

California Type Evaluation Program
Certificate of Approval
for Measuring Devices

For:

CompuBill Hydrocarbon Gas Vapor Metering System

Multi-Input Pulse Module Unit
Models: PR-32 and PR-64

Automatic Data Collector (ADC)
Model: CU (Central Unit)

Submitted by:

Energy Billing Systems, Inc.
1586 South 21st Street, Suite C
Colorado Springs, CO 80904-4260
Tel: (719) 632-9100
Fax: (719) 632-9497
Contact: Roger Freischlag

Standard Features and Options

Multi-Input Pulse Module Unit

Electrical enclosure
Battery back-up
Central processing unit (CPU)
Pulse input multiplexer: 32 meter input capability for Model PR-32
64 meter input capability for Model PR-64

Automatic Data Collector

Electrical enclosure
Battery back-up
Central processing unit (CPU)
Flash EPROM for retention of audit trail event logger during extended power interruptions
2 line x 20 character liquid crystal display (LCD)
Remote data collection via modem
Slave line printer for audit trail requirements

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: July 27, 2001

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Mike Cleary, Director

Energy Billing Systems, Inc.
CompuBill Hydrocarbon Gas Vapor Metering System
Models: PR-32 and PR-64
Model: CU (Central Unit)

Application: For use as a computerized remote register pulse counter display system. To be used with approved and compatible hydrocarbon gas vapor meters.

Identification: The required information for the Multi Input Pulse Module Unit (Models PR-32 or PR-64) is on the front cover of the electrical enclosure. The Automatic Data Collector (Model CU) identification is on the inside cover of its electrical enclosure.

Sealing: The Multi Input Pulse Module Unit may be sealed with a wire security seal threaded through two drilled head screws attaching the cover to the electrical enclosure. When protected from environmental conditions, a paper security seal may be placed across the seam of the cover and the electrical enclosure.

The Automatic Data Collector readings can be altered by unlimited access through the edit mode; therefore, the device must be sealed by Category 3 method of sealing (audit trail).

Access the audit trail information from the choices on the main display.

Using the keypad: ( ) = Display Menu

- Press any key to get into the main menu.
- Press 3 (setup), then enter access code 71239, and then press Next.
- Press 4 (Maint).
- Press 1 (Event Log).
- Press 1 to display the event log or press 2 for the printout menu.
- Pressing 2 will cause the Central Unit to query the operator for verification of printer connection.
- Upon verification, press 1 for a printout of the audit trail.

Operation: Read apartment gas consumption from the main display.

Using the keypad:

- Press any key to get into the main menu.
- Press 1 (Data).
- Enter the two digit module number (ID) from management provided Apartment List.
- Enter two digit apartment number (Input) from Apartment List or scroll to apartment by using the Prev or Next keys after entering an input number. The current reading will be on the right side of the display, top line, with the multiplier and unit of measure underneath (CCF = 100 Cubic Feet).
- Press 7 to view the reading from the previous day.
- Continue to press 7 to obtain readings from up to two months ago.
- Press 9 to return to current reading.
- Press 0 then keypad number 9 twice to return to the main menu.
- Press 0 from the main menu to finish.

Test Conditions: The Multi-Input Pulse Module Unit Model PR-32 interfaced with the Automatic Data Collector Model CU (Central Unit) and Invensys Model S-275 hydrocarbon gas vapor meter was submitted for an evaluation. The emphasis of the evaluation was on device design, performance, billing format, and interaction with the measuring system. The device was tested for agreement of indications with the vapor meter index register in addition to the functionality of menu driven options and power interruption.

Results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: R. Norman Ingram (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5277-01

California Type Evaluation Program
Certificate of Approval for Weighing Devices

For:

Weighing/Load Receiving Element
Load Cell Electronic
Model: TMS-5
n_{max}: 4000
e_{min}: 20 lb
Capacity: 80 000 lb

Accuracy Class: III L

Submitted by:

California Steel Industries, Inc.
P.O. Box 5080
Fontana, CA 92335
Tel: (909) 350-6357
Fax: (909) 350-5988
Contact: Russ Stark

Standard Features and Options

The weighing platform is designed to accommodate coils of rolled steel during the weighing operation.

Sub-floor construction: The weighing platform is supported by a steel frame. The steel frame sits on top of four load cells.

A rolled coil of steel is automatically placed on the weighing platform from a conveyor and weighed statically.

Load cells used: (4) Revere Tranducers Model CSP1-B10-50K-30S5 (Certificate of Approval Number 3110(c)-01)

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: August 8, 2001

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Mike Cleary, Director

California Steel Industries, Inc.
Weighing/Load Receiving Element
Model: TMS-5

Application: To be used for weighing steel coils, when used with an approved and compatible indicating element.

Identification: The self-adhesive identification plate is located on the side of the scale next to the junction box.

Sealing: The load cell junction box is located on the frame and can be sealed by threading a wire security seal through two drilled head screws securing the cover. The indicator is sealed according to the manufacturer's instructions for the particular indicator used.

Operation: Flattened steel is rolled onto a spindle. When the roll is completed, a conveyor unloads the rolled steel and automatically loads the coil of steel onto the weighing element.

Test Conditions: The emphasis of the evaluation was on device design, marking, and performance. The weighing element was interfaced to a Weigh-Tronix Model WI-120 indicator (Certificate of Approval Number 3018-88). Several increasing/decreasing load, shift, discrimination, and return to zero tests were conducted using 20 000 lb of known test weights and direct substitution methods to nominal scale capacity. The device was sealed and retested in the same manner 30 days later.

Results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Dan Parks (CA) and Norman Ingram (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5278-01

California Type Evaluation Program
Certificate of Approval
for Measuring Devices

For:

Vehicle Tank Metering System

Models: S and MP

Submitted by:

Palomar Mountain Spring Water, Inc
1270 West Mission Avenue
Escondido, CA 92029
Tel: (760) 743-0140, ext 124
Fax: (760) 743-0046
Website: www.palomarmt.com
Contact: Jim Lipoufski

Standard Features and Options

- 1" Schlumberger Model S or 1" Schlumberger Model MP positive displacement meter
- Minimum flow rate: 3 GPM
- Maximum flow rate: 20 GPM
- Electronic controller/register is a Veeder-Root Model 845600-100 (Generic name: EMR-100)
- LCD display of gallons dispensed
- Minimum indication is 0.1 gallons
- Cab mounted Epson Model M66SA printer
- Cab mounted interconnect box

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: August 14, 2001

_____
Mike Cleary, Director

Palomar Mountain Spring Water, Inc.
Vehicle Tank Metering System
Models: S and MP

Application: Approved for delivering potable water only.

Identification: The aluminum identification plate is mounted on the right hand wall of the meter compartment.

Sealing: The electronic meter register has provisions for a wire security seal through drilled cover bolts. Inside the electronic meter register, the central processing unit has a button to enable the calibration and configuration mode. A delivery cannot be indicated or printed unless the system is in the normal delivery mode. The electronic meter register also has provisions to be sealed to the mounting assembly with a wire security seal through drilled mounting bolts. Meter adjustments are made using change gear combinations. The change gear access plate is sealed with a wire security seal through drilled screws.

Operation: This system consists of an approved water meter and an approved controller/register mounted on a tank truck. The system is used to make deliveries of potable water to fill or top off customers' storage tank(s). A delivery ticket is printed showing the beginning and ending volume reading in tenths of a gallon.

Test Conditions: The tested system consisted of a truck mounted tank, pump, hose reel, nozzle, either a 1" Schlumberger Model S or 1" Schlumberger MP positive displacement meter, Veeder-Root Model EMR-100 electronic controller/register, and Epson Model M66SA printer. All fittings were stainless steel or food grade material. The emphasis of the evaluation was on system design and performance. Accuracy and performance tests were conducted on site, at three different flow rates, on both models. The systems were placed in service. The same tests were repeated after 112 days and over 58 000 gallons of throughput per model.

Results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: D. Reiswig (CA) and J. Raspino (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5279-01

California Type Evaluation Program
Certificate of Approval
for Measuring Devices

For:

Pump Measure Control, Inc.
Retail Motor Fuel Dispenser
Basic Model: SF Series
Capacity: $9999.99
9999.99 Gallons
Unit Pricing: $.001 - 9.999

Submitted by:

Pump Measure Control, Inc.
1070 Nine North Drive, Suite 100
Alpharetta, GA 30004
Tel: (770) 667-0667
Fax: (770) 667-0476
Contact: Grant Grove

Standard Features and Options

Model Designation:

Basic Model	SF-XX Single hose dispenser	SF-XX-XX Dual hose dispenser	SF-XX-XX-XXX-XXX Suffix (may appear in any order)
SF	**46:** 2PM-6 Smith Meter **47:** M5-P1 Liquid Controls Meter **48:** Same as 47 with higher rating solenoid valve 2PM-6 Smith Meter Flow capacity: 0 –18 gpm M5-P1 Liquid Controls Meter Flow Capacity: 5 – 18 gpm	**46:** 2PM-6 Smith Meter **47:** M5-P1 Liquid Controls Meter **48:** Same as 47 with higher rating solenoid valve **Blank:** Single Hose **Note:** This column represents a dual hose dispenser	**1:** Base dispenser unit, no reel **4:** 1" reel with steel parts **5:** 1-1/2" reel with steel parts **6:** 1" reel with aluminum parts **7:** 1-1/2" reel with aluminum parts **8:** 1" reel with stainless steel parts **9:** 1-1/2" reel with stainless steel parts **S1:** Internal frame and head of the dispenser are constructed from stainless steel **CL2:** Base meter in the unit is CLASS 2 (for aviation use). This extension would only apply to the SF-47 and SF-48. **G:** Unit is set-up for US GALLONS only **V:** Valve with VITON seals.

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: October 1, 2001

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Mike Cleary, Director

Pump Measure Control, Inc.
Retail Motor Fuel Dispenser
Basic Model: SF Series

Application: For use in dispensing gasoline (SF-46) and diesel (SF-47 or 48) motor fuel at retail service stations.

Identification: The identification badge is located on the side panel of the dispenser housing near the nozzle hanging position.

Sealing: The meter calibration for the SF–46 may be secured by a wire security seal on the top of the meter housing (2PM-6). The calibration for the SF–47 or 48 dispenser may be secured by applying a wire security seal through holes in the retaining screws on the front calibration access panel of the M5 meter.

Operation: The dispenser may be used as a stand-alone or interfaced with a service station console. Price per unit setting is accessible by opening the top panel of the display window and removing screws to the panel.

Test Conditions: The Model SF–46 and SF–48 dispensers, interfaced with the TMS 800F PLUS remote console using a Veeder-Root Pulse Transmitter Model 7671, were submitted for evaluation. The emphasis was on the design, performance, and interaction with the measuring systems. The meters used in the devices were previously evaluated under Certificates of Approval Numbers 4152-94 and 4494-97. The product throughput requirements were waived based upon testing performed in conjunction with these certificates. Accuracy tests were performed at repeated runs at three different flow rates and repeated again after 30 days of continuous service.

The results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Charlie Nelson (CA), Russell Wyckoff (OR)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5280-01

California Type Evaluation Program
Certificate of Approval
for Water Dispensers

For:

Water Vending Dispenser
(Coin-Operated)

Model: RO2418-T (Single or Double Unit)

Submitted by:

Water For Less
P.O. Box 581
Grover Beach, CA 93483
Tel: (805) 346-9627
Fax: (805) 343-5558
Contact: Gilbert Carranza

Standard Features and Options

- One, two, three, and five gallon vends
- Cash/coin acceptor
- Customer dispense initiation button

NOTE: Money-operated type devices shall clearly and conspicuously display adequate information detailing the method for the return of monies paid when the product or services cannot be obtained. This information shall include the name, address, and telephone number of the local servicing agency for the device.

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: September 6, 2001

_____
Mike Cleary, Director

Water For Less
Water Vending Dispenser
Model: R02418-T

Application: For use as a retail water vending dispenser to dispense water for domestic purposes, customarily at public locations.

Identification: The identification badge is located on the top left hand corner of the dispenser cabinet.

Sealing: The meter calibration mechanism is located in a wire sealable housing inside the dispenser cabinet.

Operation: This device is a coin value vending dispenser designed to deliver water in single, uninterrupted quantities of one, two, three, and five gallons. Delivered volume is regulated by a non-adjustable Gems Sensors brand, FT-110 Series, turbine flow rate sensor. The meter's output signal is a square wave signal whose frequency varies linearly with flow rate. This unit's control system is manufactured by Advanced Electronic Products, Inc.

A display indicates the amount required to activate a product select button and start delivery. An indicator displays the cumulative amount of coin value deposited. When change cannot be made for over deposits, a lighted indicator reflects "correct change" must be used. When product is not available, a lighted indicator reflects the "sold out" condition for which dispensing is not allowed.

Test Conditions: A single unit Model RO2418-T water dispenser was installed and tested at a field location for the evaluation. The dispenser was tested at one, two, three, and five gallon vends initially for accuracy and repeatability. The dispenser was also tested with various coin denominations and identification requirements were reviewed. The meter was sealed and the dispenser was placed in service for approximately 60 days and over 2000 gallons of throughput. The same accuracy tests were repeated, and the deliveries were found to be in tolerance.

Results of the evaluation indicate the device complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Dan Reiswig (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5282-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Floor Scale Weighing Element
Load Cell Electronic
Model: MS-XXX-YYY-ZZ Series
Capacity: 2500 lb x .5 lb to 10 000 lb x 2 lb
n_{max}: 5000; e_{min}: *See below
Platform: 36" x 36" to 96" x 120"

Accuracy Class: III

Submitted by:

Matrix Scale Service, Inc.
1240 Midway Blvd.
Ontario, Mississauga L5T2BB
Canada
Tel: 905-670-7984
Fax: 905-670-7988
Contact: Kevin Wallcraft

Standard Features and Options

Models covered by this Certificate are MS-XXX-YYY-ZZ, where XXX represents length in inches, YYY represents width in inches, and ZZ represents capacity in 1000 lb increments.

Load cell: (4) HBM Model H35 (Certificate of Approval Number 3532(c)-96), or an approved metrological equivalent
Platform material: Steel
Four load cell construction
Top access load cell junction box
Installation: Above ground or pit

*e_{min}: 0.5 lb for 2500 lb capacity scale (1.0 K load cells)
1.0 lb for 5000 lb capacity scale (2.5 K load cells)
2.0 lb for 10 000 lb capacity scale (5.0 K load cells)

Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: September 11, 2001

_____
Mike Cleary, Director

Matrix Scale Service, Inc.
Floor Scale Weighing Element
Model: MS-XXX-YYY-ZZ Series

Application: Floor scale for general purpose weighing when used with an approved and compatible indicating element.

Identification: A metal identification plate is on the side of the weighing element next to the load cell junction box.

Sealing: Access to the load cell junction box can be prevented with a wire security seal threaded through two drilled head screws securing the cover.

Test Conditions: This certificate is based on the following test and information provided by the manufacturer. The emphasis of the evaluation was on the design, marking, and performance of the weighing element. Three floor scales were submitted for this evaluation: 60 in x 60 in, 2500 lb; 48 in x 48 in, 10 000 lb; and 96 in x 120 in, 10 000 lb. The weighing elements were connected to a GSE Model 455 (Certificate of Approval Number 4245-95). Four increasing/decreasing load and corner/shift tests were conducted using certified weights on each weighing element. Additionally, width of zero, zone of uncertainty, and discrimination tests were conducted. The scales were used for a period consistent with the minimum requirements and retested in the same manner.

Results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Dan Parks (CA) and John Allgair (ID)

TA Number: 203

Control Number: 3720

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 4585(b)-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Indicating Element
Digital Electronic
Models: 77X and 77XS*
n_{max}: 10 000

Accuracy Class: III/III L

Submitted by:

Cardinal Scale Manufacturing Co.
203 East Daugherty St.
Webb City, MO 64870
Tel: (417) 673-4631
Fax: (417) 673-5001
Contact: Stephen Langford

Standard Features and Options

* "S" suffix designates NEMA 4X enclosure
"X" suffix = 8 for dot matrix graphic alphanumeric display and 14-key keyboard
= 7 for LCD 4-line dot matrix display and 55-key keyboard

Semi-automatic tare (push-button) (778/S only)
AC power supply
Pound/kilogram conversion (unit key)
Keyboard tare
RS232 interface (Comm 1)
Time and date display
Identification capability
Semi-automatic zero setting mechanism (push-button)
Automatic zero setting mechanism
Gross/tare/net weight calculations
Category 1 physical security seal
101 key PC keyboard interface
Weigh-in/weigh-out capability
Combined RS232 and RS485 interface (Comm 2)

Options:

Automatic multi-interval
Stored tare capability
Fill control
Multiple scale operation (up to seven scale input boards)

Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable technical requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: October 10, 2001

Mike Cleary, Director

Cardinal Scale Manufacturing Co.
Indicating Element
Models: 77X and 77XS

Application: General purpose indicating element for use with a compatible and certified weighing element.

Identification: The identification badge is located on the rear of the weight display housing and can be viewed by rotating the indicator on its desktop stand or wall-mounted bracket. The identification badge on the NEMA 4X enclosure may be located on the front or side.

Sealing: Access to the set-up/calibration switch is secured with a wire security seal threaded through two drilled head screws. A set-up/calibration switch is located on each installed scale input board above the scale connector on the rear of the weight display housing. On the NEMA 4X enclosure, a wire security seal can be threaded through the clamping screw and a hole on the front cover lip.

An application program can only be downloaded to the indicator when the set-up/calibration switch is activated.

Operation: The Cardinal 77X and 77XS are programmable indicators. Before applying a security seal, it should be verified that a user application program is not affecting the metrological integrity of the indicator. The following procedure will verify integrity of the indicator.

1. Apply a known weight to the weighing element and annotate the indication. Remove the weight.
2. Turn off the indicator. Wait a few seconds then turn on the indicator.
3. When the start menu screen is displayed, press the **STD** key to activate the standard program.
4. Reapply the same weight to the weighing element. If the indication is the same as that in step 1, the application program is not affecting the integrity of the indicator.
5. Repeat step 2. When the start menu screen is displayed, press the **APP** key to return to the user application program.

Once the calibration switch is deactivated the indicator may be sealed.

Test Conditions: This certificate supersedes Certificate of Approval Number 4585(a)-99 and is issued to include the LCD 4-line graphic dot matrix display and 55-key keyboard. A Model 777 was submitted for this evaluation. The emphasis of this evaluation was on device design, operation, marking requirements, and print format. Several increasing/decreasing tests were conducted with a supply voltage of 100 VAC to 130 VAC. The previous test conditions are repeated below.

Certificate of Approval Number 4585(a)-99: This certificate supersedes Certificate of Approval Number 4585-97 and was issued to include the multi-interval, stored tare, and fill control options. Model 778 was submitted for this evaluation. The indicator was interfaced to a load cell simulator and a printer. The emphasis of the evaluation was on device design, operation, marking requirements, and print format. Several weigh-in/weigh-out, increasing/decreasing loads, and stored tare transactions were examined.

Certificate of Approval Number 4585-97: Model 778 was submitted for evaluation. The emphasis of the evaluation was on device design, operation, and compliance with influence factor requirements. The indicator was interfaced to a weighing platform and a printer for discrimination, power interruption, zero tests, and print format. The unit was tested for accuracy over a temperature range of –10 °C to 40 °C. Additionally, the device was tested with a supply voltage of 110 VAC to 130 VAC.

Results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Sam Boyd (CA) 4585(b)-01; Sam Chan (CA) 4585(a)-99, 4585-97

TA Number: 226

Control Number: 3843

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5284-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Vehicle Scale Weighing Element
Load Cell Electronic
Model: ASCO 7010100S
n_{max}: 10 000 e_{min}: 20 lb
Capacity: 100 000 lb
Platform: Length 70'/Width 10'
CLC: 40 000 lb
Accuracy Class: III L

Submitted by:

ASCO
2900 Adams, Suite B-28
Riverside, CA 92504
Tel: (909) 689-1778
Fax: (909) 689-6119
Contact: David Peters

Standard Features and Options

Installations must satisfy the relationship of $v_{min} \leq d/\sqrt{N}$ d where N = number of load cells and nominal capacity ≤ CLC x (N-0.5), where N is the number of sections in the scale

Scale type: Above grade
Platform material: Steel

Indicator: GSE Model 550 (Certificate of Approval Number 4245-95), or compatible metrological equivalent

Load cells used: Artech Industries, Inc. Model 80310-40k (Certificate of Approval Number 3006(d)-97), or compatible metrological equivalent

Load cell capacity: 40 000 lb
Number of sections: 4
Number of load cells: 8
Load cell stands: Durline Model 12 3/8 SD load cell stand or compatible stand
Load cell links: Rice Lake Model 50K L/C or compatible link

Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: October 5, 2001

Mike Cleary, Director

ASCO
Vehicle Scale Weighing Element
Model: ASCO 7010100S

Application: For general purpose vehicle weighing.

Identification: A metal identification plate is attached to the summing box.

Sealing: The load cell junction box can be sealed with a wire security seal threaded through two drilled head screws. Additionally, the overall calibration can be sealed at the indicator in accordance with the sealing described for the compatible, approved indicator.

Test Conditions: The emphasis of the evaluation was on device design, marking, and performance of the weighing element. Increasing/decreasing load, mid-span, and section tests were conducted using 40 000 lb of known test weights. Strain load tests were conducted to 81 560 lb using 40 000 lb of known test weights. The scale was used for 32 days and retested in the same manner.

Results of the evaluation indicate the device complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Dan Parks (CA), Tom Bloomer (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5288-01

California Type Evaluation Program
Certificate of Approval for Weighing Devices

For:

Scale System Controller
Digital Electronic

Model: LodiMan, Version: 1.09

Submitted by:

MARKE Systems, Inc.
2502 Crenshaw Blvd., Suite 210
Torrance, CA 95328
Tel: (310) 326-2753
Fax: (310) 326-6158
Contact: Mark Moulding

Standard Features and Options

Weigh-in/weigh-out capability
Weight ticket printing
Motion detection is provided by the certified and compatible indicating element.

Minimum system requirements:	Computer display Alphanumeric keyboard Printer
Operating system:	Windows 95
Software application:	Microsoft Visual Basic
Hardware:	Pentium 100 Mhz, 16MB RAM, 200MB HD

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable technical requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: December 21, 2001

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Mike Cleary, Director

MARKE Systems, Inc.
Scale System Controller
Model: LodiMan

Application: This scale system controller is intended for vehicle scale weighing applications when interfaced with compatible and certified vehicle scale and indicating element.

Identification: System identification is visible on the video display when the system is turned on.

Sealing: The software configuration and database integrity are password protected. There are no metrological features on this device that require use of a security seal. The certified scale and indicator interfaced to the system can be sealed in the manner described on their corresponding Certificates of Approval.

Operation: The scale system controller performs weigh-in/weigh-out applications. A weight ticket can only be printed after a complete transaction is performed. Information for the truck bill of lading, including captured weights, is stored in a database.

Test Conditions: The emphasis of this evaluation was on the performance of the system controller, its interaction with the indicating element, and information printed on the weight ticket. The scale system controller was interfaced to a Mettler-Toledo JagMax indicator (Certificate of Approval Number 4336 (c)-99), through an Allen Bradly Programmable Logic Controller Model PLC-5. A Mettler-Toledo vehicle scale (Certificate of Approval Number 3124 (d)-01) was connected to the indicator. Several weigh-in/weigh-out and weight ticket printing operations were performed.

Results of the evaluation indicate the device complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: D. Parks (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5289-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Load Cell
Single-Point Beam
Model Family: AQ Series*
n_{max}, Single Cell: 5 000
Capacity: 5 kg to 35 kg

Accuracy Class: III

Submitted by:

SCAIME S.A.
c/o PTC Electronics
P.O. Box 72
Wyckoff, NJ 07481
Tel: (201) 847-0500
Fax: (201) 847-1394
Contact: John Kicks

Standard Features and Options

* The specific models of load cells covered by this certificate are listed below.

Model	Capacity (kg)	v_{min} (g)	Minimum Dead Load (g)
AQ5	5	0.5	0
AQ10	10	1	0
AQ15	15	1.5	0
AQ20	20	2	0
AQ30	30	3	0
AQ35	35	3.5	0

Temperature Range: -10 °C to 40 ° C (14 °F to 104 °F)

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: December 18, 2001

Mike Cleary, Director

SCAIME S.A.
Single-Point Beam Load Cell
Model Family: AQ Series

Application: The load cells may be used in Class III scales for both single and multiple cell applications consistent with the model designations and parameters specified in this certificate. Load cells of a given accuracy class may be used in applications with lower accuracy class requirements provided the number of scale divisions, the v_{min} values, and temperature range are suitable for the application. The manufacturer may market load cells with fewer scale divisions (n_{max}) and with larger v_{min} values than those listed on the certificate. However, the load cells must be marked with the appropriate n_{max} and v_{min} for which the load cell may be used.

Identification: A pressure sensitive badge identifying the manufacturer, model designation, and serial number is located on the load cell. All other information must be on an accompanying document including the serial number of the load cell.

Test Conditions: Two 15 kg load cells were tested using dead weights as the reference standard. The cells were tested over a temperature range of -10 °C to 40 °C. Three tests were run on each cell at –10 °C, 20 °C, and 40 °C. The temperature effect on zero was measured and a time dependence (creep) test was performed. The barometric pressure test was waived due to the insensitivity of the load cell design to changes in barometric pressure.

Results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: D. Parks (CA)

TA Number: 245

Control Number: 3967

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5290-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Scale System Controller
Shipping System, PC Computer

Model: FedEx CCD, Version 3.4

Submitted by:

FedEx Corporate Services
10 FedEx Parkway, 2nd Floor
Collierville, TN 38017
Tel: (901) 263-8205
Fax: (901) 263-7958
Contact: Sylvia Cox

Standard Features and Options

Primary weight indications and motion detection are provided by a compatible, certified bench scale
Direct sale shipping and manifest system
Operator video display for weight and price information
Semi-automatic zero capability
Label and receipt printing capability
Continuous gross weight display
Dimensional weight calculations

Minimum system requirements:	Computer display Alphanumeric keyboard Customer weight display Network server Local terminal
Operating system:	Windows NT 4.0 or later versions
Software application:	Java 2 Platform, JFC/Swing (network server and local terminal), Cobra (network server)
Hardware:	366 Mhz CPU, 64 MB RAM, 2 GB hard drive, WAN or similar network connection

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: December 21, 2001

_____
Mike Cleary, Director

FedEx Corporate Services
Scale System Controller
Model: FedEx CCD, Version 3.4

Application: Direct sale shipping system for use with a compatible, certified bench scale where the minimum load is 20 scale divisions.

Identification: The identification information is continuously displayed on the title bar.

Sealing: This system does not require provisions for sealing and is protected by a password. The source code is protected by the manufacturer. Provisions for sealing metrological parameters is provided by the certified bench scale.

Operation: The local terminal is networked to an internal FedEx server which contains the application software. A parcel is placed on the weighing platform and the operator inputs shipping and billing parameters into the scale controller. Once all required parameters have been completed, the operator accepts the displayed weight and the shipping rate is calculated.

Test Conditions: The scale system controller was interfaced to a Mettler-Toledo PS60 bench scale (Certificate of Approval Number 4327(b)-99). The emphasis of the evaluation was on device design, operation, interaction with a bench scale, information on the customer display, and printed information.

Results of the evaluation indicate the device complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: S. Boyd (CA)

TA Number: 223

Control Number: 3827

State of California
Department of Food and Agriculture
Division of Measurement Standards

California Type Evaluation Program
Certificate of Approval
for Wholesale and Vehicle Tank Meters

For:

Wholesale and Vehicle Tank Meter
Positive Displacement
Model: TSXXY (See Table Below)
Sizes: 1, 1-1/2, 2 and 3 inch
Generic Name: Stealth Series

Submitted by:

Tuthill Transfer Systems
8825 Aviation Drive
Fort Wayne, IN 46809
Tel: (219) 747-7529
Fax: (219) 747-7064
Contact: Maurice Forkert

Standard Features and Options

TSXXY Positive Displacement Meter	**ELNC Register**
• Veeder-Root register, preset printer • Air eliminator • Strainer • Preset valve • Check valve	• ELNC register with battery power and right angle drive or meter bracket • Category 1, physical seal (see Sealing on Page 3) • Reed switch pulser • Hall effect pulser

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: December 28, 2001

Mike Cleary, Director

Tuthill Transfer Systems
Wholesale and Vehicle Tank Meter
Model: TSXXY

Application: This system is suitable for stationary and vehicle tank meter applications. The products tested are listed in the "Test Conditions" on Page 3. The table below lists the product subgroups, viscosities, and specific gravity ranges tested.

Product Family	Product Subgroup	Typical Products	Viscosity Centipoise	Specific Gravity	% Abrasive Solids
Petroleum Products	Refined Petroleum Products	Diesel Fuel, Distillate, Gasoline	3.0 to 110.0	0.68 to 1.1	None
	Aviation Fuels	Avgas, Jet A, Jet A-1, Jet B, JP4, JP5, JP7, JP8	3.0 to 7.0	0.68 to 0.85	None
	Lubricating Oils	SAE Grades	22 to 106	0.87 to 0.89	None
Agricultural Liquids – Herbicides	Herbicides, Thin Liquids	Roundup	74.0	1.110	Nil
	Herbicides, Flowables	Harness	189.0	1.169	Nil
Liquid Feeds, Agricultural Liquids	Liquid Feeds	Alimet	128.0	1.220	4%
Liquefied Compressed Gases	LPG	Propane, Butane, Ethane, Freon	0.1 to 0.5	0.3 to .65	None

Model Designation For TSXXY:

TS	XX (Flow Rate and Meter Size)	Y (Material)
Base Model	06: 2 – 20 gpm (3/4") 10: 2 – 40 gpm (1") 15: 3 – 60 gpm (1-1/2") 20: 5 – 100 gpm (2") 30: 40 – 200 gpm (3")	A: Aluminum C: Stainless E: Cast Iron

Model Designation For ELNC - XXXXY:

ELNC	X	X	X	X	Y
Basic Model	Case designation **1** = 8-1/2" bolt pattern for V-R register adaptors **2** = 6-1/2" bolt pattern for bracket mounting **3** = 3/8" bolt pattern with a conduit entry **4** = 3-3/8" for mounting on cover mounted signal sensor	**0** = From reed switch sensor (battery powered ELNC only) **1** = From hall effect or other solid state pulsar	**0** = Battery powered **1** = Extended life battery pack **2** = 110/220 VAC powered **3** = 2/24 VDC powered	**1** = Reset and non-reset totalizers **2** = Same as above plus rate display	These may be followed by a letter suffix, A or B option. **A** = Pulse output (1 or 10 pulses per unit) **B** = Amplified pulse output, (1 or 10 pulses per unit)

Tuthill Transfer Systems
Wholesale and Vehicle Tank Meter
Model: TSXXY

Identification: A permanent metal ID badge is riveted to the meter body. A permanent metal ID badge is riveted to the left side of the register housing.

Operation:

- The measuring element is two elliptical shaped rotors geared together.
- Normal flow through meter is left to right facing the register.

NOTE: If the register turns backwards, the position of the adjuster drive gear (behind an official seal) needs to be reversed.

Sealing: The meter calibration adjustment and mechanism for reversing the register drive rotation can be sealed with a wire security seal threaded through two drilled head screws that secure the access plate to the meter casing. The electronic register is sealable with a physical security seal to the meter assembly. The electronic register cover plate is sealed to prevent access to the calibration mechanism of the register.

Test Conditions: This certificate supersedes Certificate of Approval Number 5019(a)-00 and is issued to include the new family product subgroup, LPG, to the product family table listed in the "Application" section and to include a new meter size. Two systems were installed at a stationary location using a separate pump feed system to each meter using ELNC-3001 electronic register for the 3/4" meter and a Mid Com SRG-402 electronic register with temperature compensation on the 2" meter. A required throughput for permanence test was completed using both TS meters with propane. The previous test conditions are listed below for reference.

Certificate of Approval Number 5019(a)-00: This certificate superseded Certificate of Approval Number 5019-00 and was issued to include the product subgroup, lubricating oils, to the product family table listed in the "Application" section. A permanence test was completed using a Model TS20A meter with SAE 40W and SAE 10W hydraulic oil. Each product's gravity was obtained from the manufacturer and a weigh scale was tested for accuracy with National Institute of Standards and Technology traceable field standards. The meter was tested gravimetrically as per gravimetric test methods.

Certificate of Approval Number 5019-00: This certificate was issued to include the products Roundup and Harness (agricultural liquid herbicides product family) and an electronic register with electronic calibration. The equipment manufacturer name has changed to Tuthill Transfer Systems which will maintain responsibility for the Fluid Power Products, Inc. equipment (Certificates of Approval Numbers 4640-97, 4640(a)-98, and 4640(b)-98). A new series of model numbers was also established. Two systems were installed at a stationary location using a separate pump feed system to each meter for each product. Each product's gravity was obtained from the manufacturer and a weigh scale was tested for accuracy with National Institute of Standards and Technology traceable field standards. The meter was tested gravimetrically as per gravimetric test methods, NCWM Publication 14. Model TS15C with Veeder-Root register was tested with Harness Xtra herbicide. Three tests at three different flow rates were conducted at 42 gpm, 24 gpm, and 4 gpm. A Model TS15C with ELNC register was tested with Roundup herbicide. Three tests at three different flow rates were conducted at 44 gpm, 24 gpm, and 4 gpm. Subsequent tests were performed after 30 days of use.

Certificate of Approval Number 4640(b)-98: This certificate was issued to include the product Alimet (agricultural liquid feed), the Reed switch pulser option, and the Hall Effect pulser option. A Model 598-0150 HEFS (2") meter was installed on a vehicle tank truck and submitted for evaluation. Accuracy tests were conducted at 23 gpm, 40 gpm, and 78 gpm. Similar tests were conducted on the meter after 200 000 gallons of throughput. Alimet was the product used for the evaluation

Tuthill Transfer Systems
Wholesale and Vehicle Tank Meter Measuring Units
Model: TSXXY

Certificate of Approval Number 4640(a)-98: This certificate superseded Certificate of Approval Number 4640-97 and was issued to include refined petroleum products and aviation fuels.

Certificate of Approval Number 4640-97: This certificate was issued based on field evaluations of two Model 591.0150.VR1 (2") meters installed on one tank truck. One meter was dedicated to gasoline and the other to diesel motor fuel. An initial evaluation was conducted and then after over 200 000 gallons of throughput through both meters, subsequent tests were performed. Accuracy tests were conducted at three different flow rates. Evaluations of vapor elimination performance were also conducted.

The results of the evaluations indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Tom Michel (CA) 4640-97, 4640(a)-98, 4640(b)-98; Dan Reiswig (CA), Michael Horan (IN) 5019-00; Charlie Nelson (CA) 5019(b)-01

Information Reviewed By: D. Reiswig (CA) 5019-00, 5019(a)-00

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5287-01

California Type Evaluation Program
Certificate of Approval
for Measuring Devices

For:

Sponsler Electronic Delivery System Totalizer
Liquid-Measuring Device Indicating Element
Model: T675-X-X (See Model Designation Below)

Submitted by:

Sponsler Co., Inc.
2363 Sandifier Blvd.
Westminster, SC 29693
Tel: (864) 647-2065
Fax: (864) 647-1255
Contact: Michael R. Sponsler

Standard Features and Options

3" x 5" backlit graphics display
Real time graphics and totals
Menu selectable programming
Infrared/RS232/4-20ma outputs
Automatic delivery system maintenance reminders
Alphanumeric display with bargraphics
Automatic temperature compensation
Selectable 2-10 point flow meter linearization
System alarm log for fault identification

Model Designation:

T675	X	X
Basic Model	C2 = 100 ohm 2 wire probe	RS2 = RS232 output
	K2 = 1000 ohm 2 wire probe	

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: January 9, 2002

Mike Cleary, Director

Sponsler Co., Inc.
Sponsler Electronic Delivery System Totalizer
Model: T675-X-X

Application: The T675 delivery system totalizer is a primary indicating element used to meter cryogenic liquids and liquid carbon dioxide. Designed to operate with approved and compatible turbine flow meters equipped with magnetic pick-up coils.

Identification: The manufacturer's name, address, and device model number are permanent artwork on the front panel overlay that seals the enclosure. The serial number label is on the rear of the unit and is also stored in memory, accessible only by the manufacturer.

Sealing: Category 3 with calibration and configuration event logs. Each event log contains the event counter number, date and time the change occurred, the parameter identification, and the new value of the parameter. A summary of each event counter showing the number of changes made is available from the audit trail. The audit trail can be accessed during initial power on by depressing and holding the backspace key (←) while momentarily depressing and releasing the **On/Off** push-button. The temperature probe is sealed by threading a wire security seal through a hole in the probe coupler and a hole in the screw attaching the probe well housing to the meter line.

Operation: Product flow through a turbine flow meter causes the rotor to rotate at an angular velocity proportional to the fluid velocity. The totalizer receives AC sine wave signals from a pickup coil located above the turbine's rotor. The signal of the pickup coil is amplified, divided, and displayed. A temperature compensation algorithm corrects for product densities influenced by fluid temperatures. When in California CO_2 mode, the vapor return displacement will automatically correct for vapor displacement.

Test Conditions: Model T675 was submitted for a laboratory evaluation interfaced to a pulse output simulator. The emphasis of this evaluation was on design, operation, and compliance with audit trail requirements. After the laboratory evaluation, the device was installed on a vehicle dispensing liquid nitrogen through a turbine meter for field evaluation. The emphasis of the field evaluation was on accuracy and repeatability. The device was configured to indicate in pounds. Three tests at three different flow rates ranging from 740 lb/min down to 200 lb/min were conducted using a cryogenic mass flow transfer standard. The device was sealed and tests repeated after approximately 30 days. Additional tests were conducted with the device configured to indicate in gallons using the conversion of 6.7381 lb/gal as compared to the cryogenic mass flow transfer standard. Liquid carbon dioxide was added to this certificate based on previous testing of the Models T575N-TC (Certificate of Approval Number 4380-96) and T650 (Certificate of Approval Number 3442(b)-00) utilizing the same temperature compensation algorithms.

Results of the evaluation and information provided by the manufacturer indicate the device complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Norman Ingram (CA)

State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5283-01

California Type Evaluation Program
Certificate of Approval
for Weighing Devices

For:

Hopper Scale Weighing Element
Load Cell Electronic
Model: QSTNK Series*
n_{max}: 7500 e_{min}: 2 lb
Capacity: 7500 lb to 20 000 lb
Dimensions: Height 4' to 10'/Diameter 3' to 6.6'

Accuracy Class: III

Submitted by:

Quality Scale
4435 North First St., Suite 103
Livermore, CA 94550
Tel: (925) 634-8068
Fax: (926) 634-8069
Contact: Mike Wedman

Standard Features and Options

* The series consist of the following capacities: 7500 lb, 10 000 lb, 12 500 lb, 15 000 lb, and 20 000 lb

Cylindrical hopper scale mounted in a four load cell configuration with steel support structure

Hopper construction material: Mild steel

Load cells used: (4) Rice Lake Weighing Systems Model RL7000B-5 double ended shear beam (Certificate of Approval Number 3892-93) capacity 5000 lb or metrological equivalent

Indicator: Rice Lake Weighing Systems Model IQ 800-3A (Certificate of Approval Number 3744(b)-97) or an approved and compatible indicator

Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

These devices were evaluated under the California Type Evaluation Program (CTEP) and were found to comply with the applicable requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: September 27, 2001

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Mike Cleary, Director

Quality Scale
Hopper Scale Weighing Element
Model: QSTNK Series

Application: To be used as a construction material hopper scale when attached to an approved and compatible indicating element.

Identification: A metal identification badge is riveted to the junction box located on the side of the hopper scale.

Sealing: The load cell junction box can be sealed by placing a wire security seal through two drilled head screws securing the cover. Additionally, the overall calibration can be sealed at the indicator in accordance with the sealing described for the compatible, approved indicator.

Test Conditions: The emphasis of the evaluation was on the design, marking requirements, and performance of the load/weighing element. A Model QSTNK-15K, 15 000 lb x 2 lb hopper scale, with a hopper 8' high and 6' diameter was interfaced with a Rice Lake Weighing Systems Model IQ 800-3A (Certificate of Approval Number 3744(b)-97) indicator for the purpose of this evaluation. Several increasing/decreasing load tests were performed using 15 000 lb of certified test weights. The system also complied with discrimination and return to zero requirements. The scale was used for more than 40 days and was retested in the same manner.

Results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2001 Edition

Tested By: Dan Parks (CA) and Ken Jones (CA)

Sponsler Co., Inc
Precision Turbine Flowmeter
Model: SPX-CB-NL-X-X/X

Application: For use in metering liquid carbon dioxide and cryogenic liquids.

Identification: The required information is stamped on the metal body of the meter.

Model Designation:

SPX-CB-NL-X-X/X						
Name	Size (in)	Bearing Type	Rotor Type	Endfitting Type	Fabrication Material	
SP	X	CB	NL	X	X	X
Sponsler	5/8 3/4 1 1 1/4 1 1/2 2	Cryo Ball Bearing	304 Nickel Liquid	NTP = A AN = B 150C = C 150S = D 300C = E 300S = F Triclover = G Grayloc = H Swagloc = I Wafer = W	304 = 4 316 = 6 316l = 6l	Boss = X

Sealing: Lock and wire security seals are not required on the meter. Lock and wire seals are required on the magnetic pick-up coil cable connections to the meter and temperature probe.

Operation: As product flows through a turbine flowmeter, rotor blades inside the flowmeter rotate through the magnetic field of the magnetic pick-up coil, thereby generating electrical pulses. The number and frequency of these pulses correspond to the amount of product and flow rate respectively. The compensator corrects the value for temperature/density changes and sends the information to the register/ticket printer.

Test Conditions: This certificate supersedes Certificate of Approval Number 3999-93 and is issued to include liquid CO_2 with lbs/min unit of measure. The Model SP2-CB-NL-B/4 carbon dioxide meter interfaced to a Sponsler Model T575N-TC truck totalizer was submitted for field evaluation and tested gravimetrically. The emphasis of the evaluation was on device design, performance, and permanence. Initial tests were conducted at several flow rates ranging from 537 lbs/min to 1047 lbs/min. These tests were repeated after approximately 75 days and 11 000 000 pounds of throughput. The flow rates for the 2" meter were changed from the original certificate at the request of the manufacturer. The previous test conditions are listed below for reference.

Certificate of Approval Number 3999-93: This certificate was issued to reflect a change to a new model numbering system in addition to consolidate a family of meters based upon separate reference certificates issued to each meter.

Results of the evaluations and information provided by the manufacturer indicate the device complies with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2002 Edition

Tested By: Earl Jenkins 3999-93, Charlie Nelson and Dan Reiswig 3999(a)-01

Information Update Reviewed By: Norman Ingram (CA)